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A Biographical Sketch of Dr. John Lawrence LeConte.

BY SAMUEL H. SCUDDER.*

The revocation of the edict of Nantes, with its attendant persecutions and other horrors, was incidentally of advantage to science, for of the tens of thousands who expatriated themselves from a community given over to tyranny and fanaticism, not a few carried with them and transmitted to their offspring, born in the land of refuge, a spirit of scientific investigation, which was doubtless quickened by the intense life of the time; and in after years, when the hereditary trait again appeared, it may often have found its healthy growth re-enforced by the admixture of the new element afforded by residence in a foreign country. At all events other countries owe much of their scientific fame to the men of Huguenot ancestry, who fled from the intolerance of Louis XIV, and whose influence outside of France would but for this have certainly been lessened for lack of direct contact, for among the Huguenots, or their descendants, as has frequently been pointed out, was an unusual proportion of men devoted to science, literature and the arts. Thus, to mention but a few names, Switzerland owes to this movement her DeCandolles and Saussures, with Plantamour and a host of lesser lights; Germany and Holland, Charpentier and Lyonet; England, her Herschels; and our own country, Bowdoin, of Cambridge, an early president of the American Academy, John Jay, of New York, and the LeContes, living and dead.

The name of LeConte, or LeComte as it was indifferently spelled, was a frequent one to France in the fifteenth and sixteenth centuries, and particularly in Normandy. The families were mostly of noble blood, and many were possessed of considerable estates; others, however, were born in poverty, of whom some came to a more honoroble distinction than wealth than title could give,—such as the learned Antoine LeConte, a jurist of Noyon, famous for his attacks on Calvin; or the other Antoine, possibly a direct descendant, who was baron de l'Echelle, and governor of Sedan, and was well known in Huguenot times for his controversial letters addressed to a Jesuit; but whether of noble or plebian blood we rarely find their names in those days, excepting as stanch Huguenots, and without leaving Normandy we come to such cases as that of Isaac

* Read before the National Academy of Science, April 17, 1884.

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LeConte, of Coutances, who, in 1687, at the age of sixty, was sentenced to the galleys because a book "of the religion" was found in his house; and of Daniel LeConte, of Poitou, sent to the galleys the following year for the crime of being a Huguenot; of Abraham and Henry LeConte, who fled to England in 1687 for conscience and life's sake; and of Guillaume and Pierre LeConte, besides others of the same name, who took refuge in our country.

Guillaume, with whom we are specially concerned, was born at Rouen, March 6, 1659. His exact ancestry is unknown, but from seals still in the possession of the family, it seems tolerably evident, to judge from the researches of Dr. LeConte, that he was descended, through his mother or grandmother, from the barons of Nonant, a Norman family of importance, and that he or his father adopted the name of the maternal line.* In the troubles which arose in his early manhood Guillaume, finding that neither justice nor liberty would be allowed him in his native country, fled to Holland and cast in his fortunes with the Prince of Orange. "At the time of his arrival in Holland," writes Major LeConte in a manuscript at hand, "William, the stadtholder, was preparing to invade England, and readily accepted the offer of my ancestor's service in his army. With him he proceeded to England," and apparently remained in his army until it was disbanded after the peace of Ryswick, for we find him with that army at the conquest of Ireland, and the family still retain a fine folio Elzevir Bible of 1669, presented to Guillaume by William III, in token of his friendship. Moreover it was in the year following the peace of Ryswick, namely in 1698, that Guillaume emigrated to this country with two nephews, Thomas and Henri, of the Nonant line. These two nephews, it may be said in passing, married in this country, but left no children.

Shortly after his arrival in New York he made a voyage to the West Indies,† where he met and married, Feb. 16, 1701, Margueritte de Val-

* Dr. LeConte, in a letter to Rev. C. W. Baird, says: "The tradition in my family is that my ancestor was so disgusted with the political conditions of France that when he went to Holland he dropped his father's and took his mother's name. . . . The LeConte seal is quartered at the lower right hand corner, and indicates a female of the family of that name of the seigneurs of Nonant, Bretoncelles, etc." But it is not known, I believe, that any Huguenots changed their name for the cause here assigned, and it seems more probable that the change was made by himself or an ancestor for some purely family reason.

† "No evidence has been recorded to show that Guillaume ever went to Martinique; it is much more probable that Marguerite had come with her father to New Rochelle, but continued to refer her home to the island from which they had

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leau, daughter of Pierre Joyeulx de Valleau. of Martinique. He soon returned to New York and purchased a considerable estate, aided by presents from King William. His wife's father must soon have died, for during his life, and perhaps before they returned to New York, they came into possession of her father's estates in Martinique, and sold in New York the sugar produced thereon. The date of his wife's death is not known, but it could not have been long after the birth of their only son William (Dec. 3, 1702), for on April 17th of the following year he married a second time Margaret Mahant (Mahoo, Mahoe, or Mahault), by whom he had two other children, Pierre and Esther. He and his wife died in New York on the same day, Sept. 15, 1720, of yellow fever.

William, the son of the first wife, married Anne (Marie Ann) Beslie, of New Rochelle,* and had two daughters, through the second of whom, Susanne, who married another Besley (or Bayley) come the family of that name, in whose succession were Mother Seton, the founder of the Sisters of Charity in this country, and the late Archbishop Bayley, of Baltimore.

Of the marriage or descendants of Esther, nothing is known to me.† The descent of the family name comes through Pierre,‡ who lived in New Jersey, and married, first, Margaret Pintard, and three years later, Valeria Eatton, of Eattonville, N. J. The first left no children, the second five,—William, John Eatton, Margaret, Thomas and Peter. William married, but died childless. Thomas and Peter did not marry. Margaret married Rev. Jedediah Chapman, one of the founders of the Presbyterian Church in this country. So again the male descent and

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emigrated."—Family records by Prof. LeConte Stevens. It may be added that the name of Pierre Valleau appears on the New Rochelle list from the earliest period.

* A romantic story is told of this son in Major LeConte's manuscript to the effect that he made a visit to his mother's relatives in the West Indies, and was there betrothed to a Miss Dugand. Before the time of the proposed marriage business took him to New York for a few months, and he then returned to claim his bride. On landing at St. Pierre's and enquiring about his betrothed, who lived some miles out of the city, he was told she had married, whereupon he at once re-embarked on a vessel just sailing for New York, determined to marry without delay the first lady who should show any regard for his attentions. In a few days he met Miss Beslie, and soon married her. He afterwards learned that it was another Miss Dugand, and not his betrothed, of whose marriage he had heard.

† See Appendix.

‡ "Dr. Peter LeConte . . . settled in New Jersey, becoming a resident of Monmouth County as early as 1734. In Middletown he practiced medicine for many years, and there is a tradition that he sometimes preached as a minister."—Family records by Prof. LeConte Stevens.

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name comes solely through one son, John Eatton, who was born Sept. 2, 1739, and married Jane Sloan in 1776, by whom he had three children, —William, who died at the age of thirty, unmarried; Lewis, born in 1782, who lived in Georgia, where he married Anne Quartermann, and was the father of Professors John and Joseph LeConte of the University of California, the only living children out of four sons and three daughters; and finally John Eatton, born in Schrewsbury, N. J., Feb. 22, 1784, who married Mary Anne H. Lawrence in July, 1821, and had three sons, two Edwards, both of whom died in infancy, and the subject of the present notice, John Lawrence, who was born May 13, 1825.*

As the life of Dr. LeConte was an uneventful one, its principal incidents may be merely sketched. At the completion of his collegiate course at Mt. St. Mary's College in Emmetsburg, Md., he entered the College of Physicians and Surgeons in New York, from which he was graduated in 1846. Although he thus made medicine his declared profession, he never followed its practice to any extent, inheriting, as he did, means sufficient to render him independent. From 1848 to 1850 he made several journeys to Lake Superior and California to increase his knowledge of our fauna. In 1852 his father's family removed to Philadelphia, where he has since resided, marrying in 1861,—the year after his father's death,—the daughter of the late Judge Grier, who, with two sons, survives him. He made other expeditions at various times both before and after his marriage to Honduras and Panama, the Rocky Mountains, Europe, Egypt and Algiers. At the outbreak of the civil war he entered the army medical corps as surgeon of volunteers, and was soon advanced to the post of medical inspector, with the rank of lieutenant-colonel, where he remained until the close of the war. In this field his fine organizing power and good sense showed themselves to excellent advantage. After this he held no post demanding his time until 1878, when he entered the United States Mint in Philadelphia,—a position which he retained until his death, which occurred November 15th last.

Francis Galton in his work on "Hereditary Genius," and Alphonse DeCandolle in his "Histoire des Sciences et des Savants depuis deux siecles," have clearly proved the influence of heredity in the development of scientific men. To mention a single example, DeCandolle points out that among the ninety-two persons who had been the chosen "foreign associates" of the French Academy of Sciences up to the time of his

* Fuller details of the genealogy of the family will be found in an appendix.

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writing, a father and a son occur no less than four times,—a number which is surprising when we consider that the election was made out of about twelve hundred men of science. The influences which affect the study of this question among ourselves are diversified, for here, perhaps better than anywhere else in the world, one may carve out one's own destiny, and a man of genius may consequently more readily rise from the lower ranks, our lineage, too, is so much more mixed, and in a large proportion of cases so obscure that the traces of hereditary character are less readily discernible; yet to pass by all names that are in close relation with European immigration we have some clear instances of family influence in science alone, as may be seen by repeating merely the names of Dana and Draper, Eaton, Harris, Hitchcock, Pickering, Pierce, Rogers and Whitney, and especially LeConte. While if we were to include, as we should, the mother's side we should have to add such related names as Franklin and Bache, and Silliman and Brush, to which no doubt a serious research would add illustrious examples, but the historical element of our country is so modern, our professional life so unstable as it were, the growth and opportunities of scientific culture so recent, that in nearly all these instances we have but the connection of a single pair of names. hence it is that the name of LeConte is here somewhat conspicuous.

Pierre, the great-grandfather of Dr. LeConte, and grandson of the original Guillaume, was a physician of some distinction in his day, and possessed, through his success, considerable property. His second wife, through whom the descent comes, was a sister of Dr. Joseph Eatton. The sons all appear to have been men of more than ordinary character, but it is not known that any of them had any special scientific tastes. The eldest, William, moved to Georgia,* and the other followed, spending the winters on their plantations there, but still retaining their possessions in the North. John Eatton, the first, until the birth of his children, must have lived at Shrewsbury, as his children were all born

* "William LeConte . . . was a lawyer by profession, and took an active part in the Revolutionary struggle. On the 22d of June, 1775, he was appointed a member of the first 'Council of Safety' for the Province of Georgia, and was likewise a member of the 'Provincial Congress' which met in Savannah on the 4th of July, 1775, representing the parish of St. Philip, or Great Ogeechee. On the 8th of August, 1775, as a member of the Council of Safety, he signed a letter addressed to Governor Sir James Wright, and his name appears on the 'black list' which the royal Governor of Georgia sent to England, with the annexed title of 'Rebel Counsêlor.'"—Family records by Prof. LeConte Stevens. See also Rev. Dr. Stevens' History of Georgia, vol. ii, pp. 101, 105, 123.

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there, summer and winter.* But he had interests with William in Georgia, and ultimately removed there to a plantation of his own in Liberty County, where, in the open life of the South, his sons (or at any rate all but William, who died at the age of thirty) and at least one of his daughters† developed a strong taste for the study of nature, which one can hardly believe was not from some predilection or guidance on their father's part. However that may be Louis, the elder, who lived, married and died in Georgia, succeeding there to his father's estates, was a man of unusual attainments for those days in many departments of science, and although he never published any of the results of his studies he contributed freely to the labors of others. He studied medicine in his youth with Dr. Hosack. He established on his plantation in Georgia a botanical garden, which was especially rich in bulbous plants from the

* "William and John Eatton must have removed to Georgia some time before the breaking out of the American Revolution, but in after life they seem to have divided their time between Georgia and New Jersey. They are said to have carried on jointly a profitable lumber business with the West India Island from their lands at 'Sans Souci,' on the Ogeechee River, about sixteen miles south of Savannah. . . . John Eatton . . . after living with his brother at Sans Souci, in Georgia, purchased extended lands adjacent to the southern boundary of the 'Midway Settlement' in Liberty County, about twenty miles south of Sans Souci. The exact date of this purchase is not now known. There is no evidence that he adopted any learned profession, or had any occupation beyond that of taking care of his property."—Family records by Prof. LeConte Stevens.

† "Ann LeConte . . . was specially characterized by her ardent love of nature, her keen appreciation of art, so far as opportunities of culture in this were presented, her high sense of duty, and her devotion to religion. Her love of nature was an inheritance, and showed itself especially in her fondness for flowers, which was early imbued by her father. Wherever her home was made a flower garden was to her an indispensable adjunct, and the zeal and industry applied in its cultivation were never unrewarded. . . . That her mind was naturally of mathematical order was shown by her precision in music, and her clear conception of form, of proportion, of number. Her advancement in this department of study in girlhood was uncommonly rapid; without further development it was only possible for such tendencies to continue presenting themselves through life without resulting in the accomplishment of any special work that might command public recognition. When the homestead in Walthonsville was contemplated she studied architecture and landscape gardening, and not a single feature in the plan of the house and its surroundings was decided without her scrutiny, criticism and decision."

One of her children, Walter LeConte Stevens, from whose "family records" I have taken the above and previous notes, a professor in the Packer Collegiate Institute of Brooklyn, N. Y., and who graduated in 1868 from the University of South Carolina, has contributed also to the renown of the family name in science by articles mostly on physiological optics published in the *American Journal of Science*. Several of his educational addresses have also been published.

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Cape of Good Hope, and a laboratory, in which he tested the discoveries of the chemists of his day. He devoted much time also to mathematical studies, and manuscrips on this subject, as well as on the animals and plants of Georgia, were in the possession of his family, but perished during the war in the burning of Columbia, in February, 1865.* Of his four sons two died at about the age of thirty, one of them (Lewis)†

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* "While in college (Columbia College) with his younger brother, John Eatton, Lewis manifested a marked fondness for natural science. He made a botanical exploration of Manhattan Island before his removal to Georgia, where the enlargement of the field of observation and research led to the cultivation of nearly all the branches of natural science, including botany, zoology, chemistry and physics. Aided by his brother, John Eatton, he introduced improvements in the culture of rice lands, reclaiming much of 'Bulltown township,' which traversed his estates. The country was subject to occasional incursions from the Creek Indians, and on one occasion Lewis was besieged by them, but succeeded in repulsing them after a severe contest, in which he was aided by his negro slaves, into whose hands he put such firearms as could be obtained. . . . Lewis established a botanical garden . . . especially rich in bulbous plants. He was among the first to produce the beautiful hybrid known as Amaryllis Johnsonii. His camelias, which were cultivated in the open air, were famous; the trunk of one of these trees, a double white, attaining a diameter of thirteen inches or more near the ground, and a height of nearly twenty feet. As late as 1860 this garden, though abandoned, was remarkable, and during that year I saw in it camelia trees over twelve feet in height. . . . In consequence of an unconquerable aversion to appearing in print, he published nothing himself, but handed the fruits of his investigations over to his scientific friends. The monographs of his brother, Major LeConte, . . . were enriched by his observations. In like manner Stephen Elliott, of the South Carolina, and other contemporary botanists, acknowledged their obligations to him. He made excursions into the adjacent counties, including one of the regions bordering on the Altahama River, in company with the botanist, Dr. William Baldwin, U. S. A., and a subsequent excursion with Mr. Gordon, the Scotch collector and botanist, who published an account in *Gardner's Magazine*, vol. viii, of the result of many months residence with Mr. LeConte. . . . Mr. Gordon asserts that Lewis LeConte's garden is the richest in bulbs that he has seen. He gives Mr. LeConte the credit of having solved the problem of the 'natural succession of forest trees.' In one of the upper rooms of his house at Woodmanston, Lewis LeConte established a chemical laboratory. . . . His varied and accurate knowledge of science, especially of medicine, was of great service to the community in which he lived. He also devoted considerable attention to mathematical subjects, and among others to that of 'magic squares.'"—Family records by Prof LeConte Stevens.

† "Lewis LeConte . . . entered Franklin College, Athens, Ga., in 1837, and after graduation went to Cambridge, Mass., where he studied law. . . . In boyhood Lewis manifested much mechanical ingenuity; was very fond of the chase, and attained extraordinary skill in the use of the rifle. At college he was specially interested in chemistry, and this interest he retained afterward. . . . His love of science was for its own sake rather than for any material benefit to be derived

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already showing a strong taste for science, while the others, still living and members of our own body, are sufficiently known to you to need from me no statement of their important and varied contributions to science.

The youngest son of John Eatton, bearing his father's name, and who was the father of Dr. LeConte, is better known than his brother in scientific literature. He lived most of his life in New York, inheriting that portion of his father's landed property which lay in the North, as his brother did that in the South. Entering the corps of topographical engineers of the United States army with the rank of captain, at the age of thirty-four, he remained in the government service until 1831, attaining in 1828 the rank of brevet-major "for ten years' faithful service."* His tastes were many sided, but his special studies--those which were the passion of his life—were in natural history. Before he entered the engineer corps he published a catalogue of the plants of New York City in the journal edited by the Dr. Hosack under whom his brother had studied medicine, and in subsequent years, during his connection with the army and afterwards, he published special studies on Utricularia, Gratiola, Puellia, Tillandsia, Viola and Pancratium, as well as our native grape vines, tobacco and pecan-nut. He published also a variety of papers on

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from its application. . . . Had he lived longer, there is reason to think his attention would have been concentrated upon science. He never exhibited any fondness for politics, but like his father kept a private chemical laboratory in his house, and rather avoided public life."—Family records by Prof. LeConte Stevens.

* It is stated in some accounts of Major LeConte that have been published, and also in some manuscript notices I have seen, that Major LeConte entered the engineer corps in 1813 as one of the military engineers, and that he projected or constructed several of the fortifications along the Atlantic sea-board, especially those about Savannah and at Old Point Comfort in Virginia (see Hist. Mag. v. 30). The army records, however, show that his commission bore date of April 18, 1818; that he was brevetted for "ten years' faithful service" April 18, 1828, and resigned Aug. 30, 1831. Furthermore, that he was attached to the topographical engineers, then distinct from the military engineers; and that his probable service in these works was the preliminary surveys which fixed the position and guided the construction of the fortifications themselves.

"Major LeConte was . . . about five feet six inches in height, with rather dark complexion, dark eyes and aquiline nose. In disposition he was usually sociable and sufficiently communicative, but occasionally reticent and secluded, strong in his affections and aversions, and much beloved by his relatives whom he visited in Georgia. . . . For a number of years he was a member of the Episcopal Church, but he subsequently became a Roman Catholic, and in this faith he died." —Family records by Prof. LeConte Stevens. Dr. LeConte was brought up a Catholic, but after marriage attended the Protestant Episcopal Church.

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mammals, reptiles, batrachians and crustacea, mostly of a systematic character, and collected a vast amount of original material for the natural history of our insects, as may be seen by a single instalment that was published in Paris in conjunction with Boisduval upon North American Butterflies. Coleoptera, however, may be said to have been his specialty, particularly in the latter part of his career, though he published only four papers upon them, and mainly upon a single family.—Histeridæ. He not only amassed a considerable collection, but he left behind a most extensive series of water-color illustrations of our native insects and plants made with his own hands. It was natural, then, that his only child, upon whom he spent all his devotion, and whose mother had died when he was only a few weeks old, should share in these tastes of his father and almost sole companion.

Coming from such a stock it is not surprising that a decided taste for natural history, and even for the special branch Entomology, in which he was engaged during an active life, should appear in the early youth of Dr. LeConte. He himself told how strong was his early passion while still at Mt. St. Mary's College. That it soon took the definite form of investigation is shown by the fact that while a medical student, at the early age of nineteen, he published his first paper containing descriptions of twenty odd species of Carabidæ from the eastern United States.

As must be the case with an intelligent student engaged in any branch of systematic zoology, his attention was quickly drawn to anomalies of geographical distribution, and we accordingly find him in one of his early papers drawing attention to several species of Coleoptera common to the North American and European continents, whose distribution could not be attributed to commerce, and in a brief but pregnant essay on the geographical distribution of Coleoptera in the northern part of our continent appended to his contribution to Agassiz's Lake Superior distinguishing "the different kinds of replacement of species which are observed in passing from one zoological district to another," and nicely defining the distinction between "analogous" and "equivalent" species. "The prevailing character of tropical faunas," he says, "is individuality; the production of peculiar forms within limited regions; while the distinguishing feature of temperate and arctic faunas is the repetition of similar or identical forms through extensive localities." Such passages, written thirty-five years ago, mean far more than if first published now, and disclose a mind quick to grasp generalities, fertile in ideas, terse and discriminating in expression.

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The subject of the faunal relations of animals was a favorite one with LeConte. He returned to it again and again; he was the first to district much of the vast and then almost unexplored regions west of our prairie country. The foundation of this work was laid in his essay on the distribution of California beetles, read to the American Association in 1851; with slight modifications the conclusions then reached were confirmed in the Stevens division of the Pacific Railroad survey, published in 1860; while in the same year a more elaborate and extended survey of the whole western country (excepting the then still unexplored region of the Great Basin) was given in his Coleoptera of Kansas and New Mexico. In this, following only in part the divisions suggested by Agassiz (who first laid down the primal geographical boundaries of North American faunas), he showed what remarkable differences were to be found within comparatively restricted areas in the western portion of our country, and laid the foundation for the special work that has since followed, in which the region here first mapped has been the point of greatest dispute.

He carried these studies a stage further when in his presidential address to the American Association in 1875, he attempted, by collating the known facts concerning the actual distribution of certain of our Coleoptera which affect the sea-shore, but are also found in outlying spots upon the beaches of inland lakes, to prove the comparative antiquity of these forms; some of them, he endeavored to show, were unchanged survivors of species which lived on the shores of the cretaceous ocean when the Rocky Mountain and Appalachian districts were separated by a wide stretch of open sea, and other species were either older or somewhat less ancient. By investigations of this kind he hoped that we might recover important fragments of the past history of the earth, where the rocks disclosed no proofs. It must, however, be said that such propositions are to be considered speculative, until supported here and there by the discovery of at least a few types from the tertiaries, if not from older rocks, identical with those now living upon the surface. It is not much to say that no such proofs have yet been found, for the careful study of fossil Coleoptera has scarcely more than begun, and in our own country of the numerous forms which have been exhumed at Florissant and other localities, already amounting to four or five hundred species of Coleoptera, very few indeed have been published. If, upon careful study, none out of this considerable number should prove identical with living types, and especially if species should occur nearly related to the forms specified by LeConte in the way of illustration, the force of the considerations presented by him will be weakened, and some modified explanation will be

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required of the anomalies of distribution to which he has called attention. For this we must await the results which are forthcoming. Meanwhile the suggestions made in this address, and the additions to them in his paper on Rocky Mountain Coleoptera in the "Bulletin of Hayden's Survey" in 1878, in which he expressed his belief that by careful studies of insect faunas in their totalities we shall be able to obtain a "somewhat definite information of the sequence, extent and effect of geological changes in the more recent periods," are pertinent, and, we may hope, will prove fruitful.

These contributions to zoo-geography, to which we have first called attention, were after all but accessories to his main work, the overflow of a mind charged with resources. Though in a very subordinate and imperfect way, the key-note of his after work may be said to have been struck in his very first paper, in which he concentrated his attention upon a single group; and passing over his next, which is confined to miscellaneous descriptions, we come at once upon synopses and monographs of greater or less extent and value. It is not our purpose here to specially praise this early work, which no one knew better than he, or more freely acknowledged, was marked by crudity and inexperience; but we wish to call attention to the point that at the very outset of his career he was not carried away by the wealth of material at his hand into random publication of miscellaneous material, after the fashion of the day, but comprehended with scholarly instinct the far higher worth of symmetrical and co-ordinated work and the training of his analytical powers. There was, therefore, from the first, an orderly method in his work which shows itself even in his incomplete essays; and this was all the more remarkable from the fact, which cannot be too forcibly insisted upon, that previous to 1848, when his first so-called monograph appeared, there had been published by American entomologists three papers only of this character, all others having been mere catalogues or miscellaneous descriptions; one of these monographs was by Say, on Cicindelidæ, published in 1817; the second by Major LeConte, in 1845, on Histeridæ; and the third by Haldeman, as late as 1847, on the longicorn Coleoptera. LeConte, therefore, is seen to cut himself loose from the ordinary practise of his predecessors, and at once in this as in his geographical work to apply himself independently to the problems before him. How industrious he has been in this direction, and what an influence he has exerted on the study of Entomology in this country may be recognized by the mere statement that upwards of sixty monographic essays, some of them ex-

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panding to the form of a volume, and all of them after the first five years of work direct and valuable contributions to the taxonomy of the order have appeared from his pen.

We do not propose to analyze these, but only to call attention to two of the more important, and to point out that these monographic essays and synopses covered with fair equality the entire series of Coleoptera, as one may see by examining Henshaw's appendix to LeConte and Horn's Classification of the Coleoptera of the United States, published last year. "They contain evidence," says his pupil and colleague, Dr. Horn, "of patient and original research and added greatly to science. His work was in every case an improvement on what had previously been done; he left a subject better than he found it."

These studies in the classification of the Coleoptera of our country culminated in a couple of remarkable works, published in 1876 and 1883, in each of which he was joined by his ardent coadjutor, Dr. Horn.

The first was a thorough monographic revision of the Rhynchophora or weevils of our country, forming an entire volume of the Proceedings of the American Philosophical Society, in which Dr. Horn elaborated a single family, the Otiorhynchidæ, while the remainder, or about three-fourths of the work was prepared by Dr. LeConte. This memoir not only supplied a great need in American Coleopterology, but it completely revolutionized the accepted classifications of the day, and will make its way felt over a broader field than that it purported to cover. For LeConte, carrying out ideas which he had previously communicated to this Academy in 1867 and 1874, showed in this vast and inferior type of beetles the presence of characters, principally in the arrangement of the pieces on the under surface of the thorax, which isolated them completely from all other Coleoptera, and allowed the use, in their sub-division, of characters drawn from quite different parts than were used in the sub-division of the normal series. The three great series which he thus established within the Rhyncophera were considered by him as the taxonomic equivalents of the six great groups, Adephaga, etc., in the normal series. Complaint has been made (from the other side of the ocean of course) that such fundamental changes should not be "based upon the study, however accurate, of the fauna of a limited district or country," and entomologists are accordingly warned not to allow this essay "to disturb a generally accepted classification." Such persons overlook the repeated statement of the learned authors that they have re-enforced their study of the American forms by the examination of many foreign types, and fail to notice that the principal novelty from which all the others

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sprang was announced years previous, allowing frequent opportunities to test the value of the proposed changes. It was a bold stroke, as Dr. Horn has pointed out, and it could not be expected that acceptance would at once be gained. The more closely it is examined the more rational does it appear, and we do not believe the day far distant when this as well as previous changes introduced by Dr. LeConte will find general acceptance.

The other work to which we referred, and which appeared only a few months before his death, was founded upon an uncompleted work which the Smithsonian Institution published in 1861, wholly his own, and which planned to give a general and systematic survey of all the genera and higher groups of North American Coleoptera. This first part included all the Isomera, excepting the Phytophaga, and was followed in the succeeding year by the Heteromera, the Phytophaga, generally classed in close proximity to the Rhyncophora, being still left untouched. When, in 1867, he had concluded on the absolute separation of the Rhyncophora from the other series of Coleoptera, he was free to carry out his unfinished work, and, in 1873, Crotch being then engaged in publishing a rapid series of synopses of the genera of our Chrysomelidæ, and Horn investigating the lesser family Bruchidæ, LeConte took the remaining family, Cerambycidæ in hand, and published a third instalment of his classification. From this time until the monograph of Rhyncophora appeared, he was engaged in the elaboration of that work. And now nothing remained but to complete the task to which he had pledged himself nearly a score of years before. To produce a homogeneous work, however, it was still necessary not only to revise much that had already been done, in the light of new material and the later investigations of others, but to break new ground as well over the fields as yet comparatively untrodden.

A sense, however, of less enduring powers of work and the assistance of which he gladly availed himself, which his colleague and former pupil, Dr. Horn, had rendered with such excellent results in the monograph of the Rhyncophora, led him to solicit anew the co-operation of Dr. Horn in the preparation of the monographic essays upon whose foundation it should rest, "hoping thereby to lighten his own labor and prepare the work in a shorter time." How zealously Dr. Horn advanced to this work his own thorough treatises, following rapidly one after the other, is sufficient proof; they are evidences not only of his industry and acumen, but of his loyalty to his friend, and of the heartiness of his co-operation.

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Three years ago, "when he realized that his health was failing, he expressed the desire," writes Dr. Horn, in his own modest account of their common task, "that I should join him in more active authorship in the work" which was to contain the final results of more than thirty years' systematic study of the Coleoptera of North America. "The first pages went to press in January, 1882, and the book was completed in March, [1883,] in time for him to realize that it had been at least well received. For obvious reasons," continues Dr. Horn, "I cannot dwell upon the merits even of his share of this work, except to say that his earlier edition is the basis of the present; without the former, the latter might not have appeared. Evidences of his influence will be found on every page, and whatever it was my privilege to contribute was made possible entirely by his early instruction and guidance."

A comparison of the early and the later work, separated by an interval of over twenty years, is most instructive. The classification of Coleoptera proposed by Olivier, founded primarily upon the supposed number of tarsal joints in the front and hind legs, was long so firmly established in entomological tradition, especially from the support given it by Latreille in his numerous general works, that it held some sway long after it was proved to be artificial. It served a useful purpose, however, in showing that this great assemblage of animals, of which more than a hundred thousand have long been known, was made up of a number of great series, or complexes as LeConte called them, which, with some modifications of considerable importance, have been virtually accepted by entomologists for a long time. Their relative positions, however, and their equal or unequal taxonomic value have been a matter of considerable difference of opinion; there was a period of about a generation in length, previous to 1850, in which questions of this kind received a very large share of attention from leading entomologists, but the general consensus of opinion seemed to chrystallize toward the view expressed by Lacordaire in his great work on the genera of Coleoptera commenced in 1854, and this consensus was very closely reflected in the first edition of the "Classification of the Coleoptera of the North America,"—not in any nomenclature of the complexes, for these were not even mentioned, but in the order in which the families followed one another. This succession was as follows: 1, Adephaga; 2, Clavicornia; 3, Lamellicornia; 4, Serricornia; 5, Heteromera. Beyond this, as stated earlier, the work did not proceed, as here, according to the accepted classification, the Rhynchophora were reached, but in 1873, the concluding part of the earlier edition was published, treating a portion of the Phytophaga, making

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them and not the Rhynchophora follow directly after the Heteromera, and so relegating this remaining complex to the last place.

This was the first serious disturbance of the accepted sequence of the complexes, and one upon which it would appear that LeConte's claim to highest distinction must ultimately rest with the world at large. It is much, very much, that the systematization of the vast array of Coleoptera of the United States may be said to be due wholly to his initiative and very largely to his personal studies and skill. But that he should venture to disturb fundamentally that system which had been the outcome of two generations of minute and patient investigation is, if it eventually stand the test of criticism, the work of a master hand. It goes, without saying, that he will never be forgotten for what he has done for his field of science in this country. It remains to be seen,—for his prime work has still to stand the test of time,—whether in future generations his fame shall be as great elsewhere as here.

Consider now what must, in a sense, necessarily follow when a vast complex like the Rhynchophora is removed bodily from the midst of a series of complexes. It brings at once to the surface the question of the mutual relations of the great complexes hitherto separated by the Rhyncophora, and the whole fabric of classification must be narrowly investigated. And now begins the co-operative work of master and disciple, or rather we may now say the two colleagues, to which allusion was made in the quotation above from Dr. Horn's notice of Dr. LeConte. Hereafter we can speak of the work only as their joint production. Dr. Horn accepted fully in principle and in fact the views of Dr. LeConte concerning the Rhynchophora. Indeed, as Dr. LeConte states, the clew to his primary divisions of the Rhynchophora proposed ten years ago was given by an observation of Dr. Horn in his studies of certain Curculionidæ. These authors had together studied the structure and discussed the relationship of a vast number of our Coleoptera; each was thoroughly acquainted with and had tested the value of the work of the other. In their two cabinets eleven thousand species of our beetles were at hand for verification of disputed points. What better opportunity could offer for such a joint work?

If now we compare the two editions of the work to see what changes were made, consequent upon the isolation of the Rhynchophora, we discover first of all that the Coccinellidæ and allied families are removed bodily from the Phytophaga with which they had from time immemorial been placed,—a survival in fact of the purely tarsal system of classfication,—and placed in the clavicorn series. This indeed had been done by

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Crotch in 1873 and 1874, but without defined reason, and working as he did, side by side with LeConte and Horn, he doubtless shared their views of the Rhynchophora, and discussed with them the changes necessitated thereby. The remaining Phytophaga, including both the Longicorns and Chrysomelids, were placed before instead of after the Heteromera, as a part of the Isomerous series, and the relative position of the Lamellicornia was reversed,—a return to the order of Latreille. The arrangement of the complexes as it now appears in the "Classification" of Drs. LeConte and Horn is as follows: 1, Adephaga; 2, Clavicornia (including Coccinellidæ, etc.); 3, Serricornia; 4, Lamellicornia; 5, Phytophaga (excluding Coccinellidæ, etc.); 6, Heteromera; 7, Rhynchophora.

These, however, are only changes in the grand relations of the great complexes. If we look more deeply we shall also find essential modifications in the minor arrangement of the families within the complexes, especially in the Clavicorn and Serricorn series, made necessary by the progress of investigation in all parts of the world. While other portions, like the Carabidæ in the Adephagous series, have been altogether rewritten. As it stands, the work is the last expression of science regarding the classification of Coleoptera, and must exert a wide and powerful influence on the study of this great group, not in this country only but throughout the world,—especially wherever students are dealing with the beetles of the temperate zones, as Mr. A. Matthews has said: "The comprehensive lines on which it (this book) has been constructed will include (with, it may be, trifling modifications) the Coleoptera of both sides of the world." We think we can say unhesitatingly that very few if any works, dealing with large groups of animals, have been produced in this country,—perhaps none, if we except those of Professor Dana,—which have had so much influence on the views of naturalists the world over upon the classification of the group concerned, as this is sure to have, and we look confidently to the future for the verification of our judgment.

We have specified in some detail these two works of Dr. LeConte because they are the most extensive and the latest, and because they represent the others, summing up in a sense the investigations of an active, studious life. They everywhere bear the marks of a master, and none the less that he associated with himself one much younger than he, who had been his pupil. This, too, is the mark of a master. There is no need, therefore, nor have we time to pass in review the separate monographs and other papers upon Coleoptera which flowed from his pen. It is sufficient proof of his industry to point out that nearly half of our Coleoptera have been described for the first time by him (he has actually

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described or at least named 4739 nominal species), and that in his works will be found original definitions of more than 1100 of the higher groups, besides nearly 250 synoptic or analytic tables, some of them several times remodeled.*

These entomological studies, while they formed the principal features of LeConte's scientific life, were not the only ones which enjoyed his attention; for the liberal training he received, the paternal example, and his own general receptivity made him at home over much wider fields. One of his earliest papers was upon a mineralogical topic, and between 1848 and 1857, the ten most prolific years of his life so far as the mere number of papers is concerned, he published various minor essays on geology, radiates, recent and fossil mammals and ethnology, indicating the activity of his mind in many directions; and his general papers on various occasions, as well as his conversation, showed his familiarity with the advance of science in all directions.

That LeConte was the greatest entomologist this country has yet produced is unquestionable. *Facile princeps* will be the universal judgment both now and by posterity. His worth was early recognized. European entomologists who crossed the ocean paid him their first visit; and all, charmed with his learning and affability and the freedom with which he communicated his rich stores of knowledge, always spoke with enthusiasm of his erudition and his generous and simple spirit. It was the same on his visits abroad. His minute familiarity with all the details of structure through long series of varied degrees of complexity, his wonderfully retentive memory, his quick and accurate judgment, his courage and self-reliance, all gave his words weight, and his counsel and opinion were eagerly sought by his confreres. This is further shown by the fact that he was received into the limited circle of recipients of honorary membership in all the older and larger entomological societies of Europe.†

On several occasions, it was my chance, while in Europe, to follow in his steps, and it was always to find those who had seen him, most hearty

* An index to the Coleoptera described by Dr. LeConte has been published by Henshaw (Trans. Am. Ent. Soc. ix, 197), who also compiled, several years since, a list of his entomological writings (152 numbers, since increased to 180) which was published as the first of Dimmock's Special Bibliographies, issued with *Psyche* vol. ii.

† LeConte was a corresponding or honorary member of more than thirty societies, about equally distributed between this country and Europe. He was also one of the founders of the American Entomological Society. He was elected, in 1874, to the presidency of the American Association for the Advancement of Science, and at the time of his death had been several years a vice-president of the American Philosophical Society.

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in his praise. "No one who ever knew him," writes one after his death, "could fail to be fascinated by the amiability of his disposition, his universal knowledge and surpassing intellect." There was a quiet ease and dignity in his person, which, while it in no wise hindered approach, gave evidence of a reserve of force and of a confidence not easily shaken. I remember well with what timidity I, an utter stranger, a mere boy, first ventured to seek him, a man but twelve years my senior, yet clothed with all the garb of learning,—and with what kindness I was received and counseled. The pains he took for others, the time he has given, the immense labor he has undertaken in determining series of beetles for a hundred correspondents all over the country can never be known. The signs of it appear in all the entomological literature of the United States and Canada.

LeConte was not a man of many words; his language was precise and vigorous, and his style perhaps a little scholastic for these later days; at all events it was a style so individualized that I do not think he could have hidden the authorship of a letter or an essay he had written. He was of a philosophic turn of mind, and with a strong natural conservatism, was yet openhearted to the truth. He accepted, rather preached, the modern evolutionary philosophy, but had little patience with those who looked upon this as a means of ridding the world of an intelligent control—of "the Providence," as he expressed it, "which presides over and directs the system of evolution." Cautious and never destructive in the tendencies of his thought, he abhorred the crude speculations, whether of the irreverent or bigoted mind. "Let not our vanity," said he, "lead us to believe that because God has deigned to guide our steps a few paces on the road of truth, we are justified in speaking as if He had taken us into intimate companionship, and informed us of all His counsels." Those who knew him better than I can speak better of his personal worth. They have spoken, and they but reflect the feelings a less intimate acquaintance has given me. "We all knew him," writes one, "as a cultured scholar, a refined gentleman, a genial companion, a true friend. To me he was more." It is his colleague, Dr. Horn, who is speaking. "Our friendship ripened to an intimacy never shadowed by the slightest cloud." "Let the world reverence his memory as a discoverer," says Professor Lesley, his life-long friend, "as a philosopher, as a genius. I can only remember [him] as an engaging friend, a faithful friend, a speaker of the truth, a judicious adviser, a companion to think with, a reliable coadjutor to deal with, but still, above all, as a most affectionate and trustworthy friend."

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APPENDIX ON THE ANCESTRY OF DR. LECONTE.

As the tracing of the pedigree of Dr. LeConte has been attended with some difficulty, and I have reached some conclusions at variance with family traditions, I have ventured to think that its publication may not be without interest. To enable my statements to be verified I append in a note* the sources of information that have been open to me, which are referred to throughout by the numbers prefixed to them; and in doing so I must return cordial thanks to those who have assisted me with original material. First to Mrs. LeConte, who kindly placed in my hands all the documents bearing on the subject which were in the possession of Dr. LeConte, including the manuscript genealogical notes collected by his father, Major LeConte; second to Prof. Walter LeConte Stevens, who has permitted me to use and publish what I wished from a MS. family record of great interest,—a permission of which I have gladly and freely availed myself, both here and in the body of this article; third to Rev. Chas. W. Baird, who has generously given me, from original data, many useful clews to the early history of the Huguenots in America, which he has collected at great pains; and fourth to Prof. Joseph LeConte, who has given me many details, particularly with regard to the California members of the family.

It has long been a tradition in the LeConte family that they were descended from one Guillaume LeConte, who was with the Prince of Orange in Holland and England; came to this country toward the end of the seventeenth century; settled in the Huguenot Colony at New Rochelle, near New York City, and married a Marguerite de Valleau, of Martinique (the date of the marriage being exactly given), through whom the descent came. It has also been claimed that two others of the same name, his nephews, came over with him and with the Chevalier DeLancy, who landed in New York July 7, 1686.

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* 1. Manuscript notes by Major J. E. LeConte.
2. Manuscript notes by Rev. C. W. Baird from original records.
3. Family records of the LeConte family (MSS.) by Prof. W. LeConte Stevens.
4. Manuscript notes by Prof. Joseph LeConte.
5. " entries in old Elzevir Bible owned by Dr. LeConte.
6. " notes of Dr. J. L. LeConte.
7. " documents in State Archives, Albany.
8. Marriage licenses of New York previous to 1784 (Albany, 1860).
9. New York Genealogical Biographical Record. Vol. II (O'Callaghan).
10. Historical Magazine, Vol. V (New York).
11. Bolton's History of the Church in Westchester County.
12. " " of Westchester County, N. Y.
13. Wicke's History of Medicine in New Jersey; based on MS. notes of Prof. John LeConte.
14. Sharswood's life of Major LeConte (Stett. ent. Zeit.).
15. Documentary History of New York.
16. Colonial History of New York.
17. Stevens' History of Georgia.
18. Calendar of Historical MSS. in Secretary of State's Office at Albany. Part II.

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In a "list of Huguenots of the colony at New Rochelle," however, which Dr. LeConte had in his possession, and the exact origin of which is unknown, we find the following names: François LeConte, Isaac LeConte, Jaques LeCompte, Jacques LeConnet, Guillaume LeConte, Pierre LeConte and Henri LeConte, seven names. As the list includes 371 names of males alone, and the name of Etienne Delancy among others enters it, while the census of 1710 gives only 67 "male Christians" at New Rochelle, it is evident that the list includes all the Huguenots of the region about New York.

In any case we have here to deal with six LeContes, provided we look upon Jaques LeCompte and Jacques LeConnet as the same, as we perhaps may. But in truth we have a record of two more in this region before 1700: Thomas, who, like Henri mentioned in the list, is the reputed nephew of Guillaume, and came over with DeLancy in 1686, and John or Johannes, to whom letters of denization were granted in New York July 29, 1686 [7], and who was probably the son of Pierre. That John is not mentioned in the list indicates, it appears to me, that the list is ancient and independent, for repeated records of John are to be found which would not have escaped a search among documents; and he was not a mere stripling, for his house in New Rochelle went by his name in papers written eight and twelve years after his death [11, 12], and at his death in 1701 or 1702 he left a child under seven [7].

We have then (I) Jacques, of New Rochelle, whose birth-place is unknown, who was perhaps the brother of II, and the first record of whom we find in 1691, but in a document which makes it appear probable that he was in New York or the West Indies in 1689. (II) François, of New Rochelle, formerly of Port L'Evéque, perhaps brother of I, whose marriage is on record as taking place in New York in 1693 [2]. (III) Pierre, of Staten Island, born in Dieppe, possibly the brother of VII, and naturalized in New York Sept. 27, 1687 [2], with his son Johannes, naturalized in 1686 [7]. (IV) Isaac, mentioned above, of whom nothing more has been discovered. (V) Thomas of New York, originally from some place in Normandy, brother of VI and nephew of VII, who is supposed to have arrived with DeLancey in 1686. (VI) Henri, of New York, from Normandy, brother of V and nephew of VII, who is supposed to have come over with DeLancey, and of whom we have record as a lieutenant of a foot company in New York before 1691 [7]. (VII) Guillaume, of New York, formerly of Rouen, possibly the brother of III and the uncle of V and VI, whose name we first find on documents in 1702. The descendants of these are recorded in order further on.

In the above I have distinguished between I and VII by calling one Jacques and the other Guillaume, as in the list of Huguenots. Heretofore they have been taken for the same person, and called indifferently Jacques, Guillaume and William. That they are two personages seems highly probable, and as it is from one of them that the family we are interested in has descended, I have spared no pains to determine the point. The evidence is as follows:

I a. In the State Archives at Albany, among the historical documents, vol. xxxvii, f. 247, we find a petition with the signature—

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asking that letters of administration be given to him on the estate of "mr. James Laty his father in Law" who died since he had given a "Letter of atturney made and written at the Island of St. Christophers bearing date the 16th of March 168§." The petition was granted Sept. 9, 1691. His wife's name, therefore, was Laty. This I take to refer to I:

I b. In the "List of the towne of New Rochelle &c XBR 9th 1710" [15] the names of the inhabitants are evidently given by families, in which the father's name is placed first, next the mother, followed by the children, where, excepting in cases of great disparity, the boys precede the girls. In this list we have two LeConte families, as follows, the figures giving the ages: William LeConte, 52; Mary LeConte, 42; William LeConte, Jr., 16; Hester LeConte, 17; Jean LeConte, 6; ffrancis LeConte, 45; Mary LeConte, 55; Josiah LeConte, 13; Mary LeConte, 18. Supposing the older William to be the same as the Guillaume (= Jacques, I) of the preceding paragraph, he was born about 1659, his wife (Mary Laty) about 1669, his oldest son (William) about 1695, his oldest daughter (Hester) about 1694, and his youngest son (Jean) about 1705.

II a. The ancestor of Dr. LeConte (VII) is stated in the family traditions to have been in the army of William III when in Ireland in 1690, and to have afterwards emigrated to this country. It is therefore highly improbable that he was given a letter of attorney at St. Christophers in 1689.

II b. The traditions also state especially with date (Feb. 16, 1701) his marriage to Margueritte de Valleau, of Martinique; whereas in 1710 the living wife of I was named Mary.

II c. The marriage licence of "William LeConte and Margaret Mahoe" April 17, 1703, is on record in New York (Office of surrogate. Wills. lib. vii, p. 100) [2]. This again could not refer to I.

II d. The will of "Guilliaume LeCounte" with the signature as follows:

is also on record at the same office. It mentions his "deer wife Margarita" and names three children: Guillaume, Esther, and toward the end of the will, Pierre. The will was acknowledged and proved March 2, 17$\frac{1}{11}$. As we have the dates of the births of all these children, we may conclude that in 1710, that is at the time of the census of New Rochelle above mentioned, the two families we are attempting to separate stood thus:

I		VII	
Jacques LeConte	æt. 52	Guillaume LeConte	æt. 51
Mary Laty (his wife)	" 42	Margaret Mahoe (his wife)	" ?
Children		Children	
Hester	æt. 17	William (by former wife)	æt. 7
William	" 16	Pierre	" 6
Jean	" 6	Esther	" 4

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This seems the only way to settle the otherwise conflicting evidence, and when we consider that these two men, of the same age, emigrating to New York at about the same time, each having three children, of whom two were named William and Hester (or Esther), it is certainly not surprising that they should have been confounded. The only difficulties in the way are the considerable resemblance of the two signatures (considering the interval of about twenty years between them), and the fact that Mrs. Dr. LeConte does not recognize in the seal attached to Guillaume's will above mentioned any now in her possession said to have descended from him. This seal gives a full length effigies of a knight in armor on a rectangular plate surrounded by cloud-like ornaments. But the fact that different seals exist which have descended from him renders this fact of less importance.

It might also be added that there are several other unaccountable facts which affect the early history of the LeContes. I have mentioned that the names of only two families occur in the census of New Rochelle in 1710, although all the original LeContes with whom we are concerned came over to New York and vicinity before or about the year 1700. There is also another list of New Rochelle inhabitants, said to be of the year 1698, but more probably belonging to 1712 (N. Y. Coll. MSS. xlii, f. 59), in which no LeContes at all are mentioned, although 188 whites between the ages of 1 and 67 are given. Nor does the name occur in a similar list of 517 persons (including about 220 white males) of Westchester County (*ibid* f. 60). Nor in the census of the city of New York "about the year 1703," where all the "masters of familys" are entered (Doc. Hist. N. Y. i, 611–24).

My own brief researches having brought out so many facts, I can hardly doubt than a closer investigation of early State and ecclesiastical documents will determine very certainly the relations of all the parties concerned. On the conclusions given above as a basis the following tables of lineage are presented:

Jacques b. 1658, m. Mary Laty, of St. Christopher (b. 1668) [7, 15.]
- Hester b. 1693, m. Ezechiel Bonyot (nat. Ap. 21, 1719) [2, 15.]
  - Marianne bap. Feb. 5, 1719 [2.]
  - Esther " Aug. 25, 1717 [2.]
  - Ezechiel " Dec. 16, 1719 [2.]
  - Marie " Ap. 30, 1721 [2.]
- Guillaume b. 1694, m. Annette Martha —— [7, 12.]
  - Francis m. —— [12.]
    - Paul d. 1815 [12.]
    - Josiah m. Anne Riché [12.]
      - John m. (lic. Jan. 9, 1756) Catharine Van Horne [9, 12.]*
      - Thomas [12.]
    - John m. Hannah Ferris [12.]
      - Samuel [12.]
      - Hannah [12.]
      - Eleanor [12.]
    - Joseph m. Hannah Raymond [12.]
      - Platt [12.]
      - Francis [12.]

* Bolton makes this John to have married Catherine, but it is impossible that he should have been married when his great-grandfather was only 62 years old; another John is certainly meant. It is indeed far more likely that it was his great-grandfather's brother Jean's son John. (q. v.)

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[Children of Joseph, continued.]
Joseph [12.]
Elizabeth [12.]
Josiah m. i, Mary Angevine; ii (lic. Oct. 29, 1762), Susannah Soulice [8, 12.]
Peter, lost at sea [12.]
John m. Sarah Badeau [12].
Josiah [12.]
William [12.]
John [12.]
Mary m. Nathaniel Lawrence [12.]
Jean b. 1705; commiss. on part of gen. ass. 1736; memb. gen. ass. from Richmond Co. 1750; d. early in 1756; m. ——— [2, 15, 18.]
John m. without license in Jan. 1756 [18.]*

Francois b. 1666, at Port L'Evéque (son of Francois LeCompte and Marie Amon); m. May 19, 1693, Catherine Lavandier, wid. Daniel Marchand; victualler; nat. Ap. 18, 1695; was living in 1710 [2, 11, 15.]
Marie b. 1693 [15.]
Francois bap. March 4, 1694; moved away from New Rochelle before 1710?; was living there in 1762 [2, 11, 15.]
Josias bap. Feb. 21, 1697; m. Esther Besly, da. Olivier and Susanne Besly; was living in 1743 (see below under Susanna, grandda. Guillaume) [2, 11.]
Judit b. Dec. 18, 1729, bap. Jan. 25, 1730 [2.]
Francois b. Feb. 14, 1732, bap. April 7, 1732; sponsors Olivier and Susanne Besly [2.]
Josias m. Susannah Bertrain, da. Peter and Catherine Bertain [2.]†
Susannah b. March 11, 1751, bap. March 31, sponsors Josias LeConte senr. and Cath. Bertain [2.]
Peter b. Feb. 12, 1753, bap. March 11, 1753, sponsors Peter Bertain and Esther (Besly) LeConte [2.]
Madeleine bap. March 20, 1698, d. before 1710 [2, 15.]

Pierre b. at Dieppe, nat. Sept. 27, 1687, d. 1702, m. Margaret ——— [2, 12.]
John nat. July 29, 1686, m. —— Lakeman (da. Abraham Lakeman, d. about 1702; exec. of will were Peter LeConte and Abraham Lakeman) [7, 12.]
Susannah b. about 1696 [7.]
Peter [12.]
James [12.]

Isaac.

Thomas m. i, Gertrude van Hoorn of Staten Island; ii, Elizabeth Broome of New York; had no children [1.]

Henri m. Aug. 5, 1686, Grace Walroud, da. George Walroud of Barbadoes [1, 2.]
Walroud b. July 30, 1691, d. Aug. 5, 1692 [1, 2.]

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* Perhaps it is this John who afterwards married with a license, Oct. 29, 1762, Susannah Soulice (see also note above).

† Peter and Catherine had another daughter, Catherine, who married Isaac Sicard about 1750 [2.]

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Guillaume b. at Rouen, March 6, 1659, d. at New York Sept. 15, 1720; m. i, Feb. 16, 1701, Margueritte de Valleau, da. Pierre Joyeulx de Valleau of Martinique; d. between Dec. 3, 1702, and April, 1703 [1, 3, 4, 6.]

William b. Dec. 3, 1702; lieut. militia company at New Rochelle 1740; d. 1760: m. Anne Elise (Marianne) Beslie [1, 3, 4, 6, 7, 13.]

Anne bap. Oct. 23, 1733, sponsor her aunt Esther; m. April 14, 1764 (lic. July 1, 1763), Peter Flandreau [1, 2, 3, 8.]

a daughter [1.]

Susanne bap. Feb. 8, 1727, sponsor, Pierre LeConte (brother or uncle?); m. William Bayly, brother of Olivier Besly (see above under Josias, son of François) [2, 3, 6.]

William LeConte b. Aug. 8, 1745, bap. Aug. 25, 1745, sponsors William LeConte grf., Olivier and Susanne Besly uncle and aunt; m. Sarah Pell, da. Joseph Pell, 3d Lord of Pelham manor [2, 3.]

Susanne.

William LeCompte.

Joseph.

Ann Bayley m. Capt. James Hague.

James.

William D.D. Baptist clergyman b. about 1805.

John Bayley.

Glorianna.

Joseph.

Richard (Bailey) b. 1745? surg. Engl. army; m. i, Mrs. Post, née Charleton no issue (child by former marriage Dr. Wright Post; m. ii, Charlotte Amelia Barclay [3.]

Child, name unknown [3.]

Eliza Ann (Elizabeth), m. —— Seton? known as "Mother Seton" [3.]

Richard [3.]

Barclay [3.]

William [3.]

Guy Carleton m. Grace Roosevelt [3.]

James Roosevelt, Archb. Baltimore [3.]

Richard [3.]

Guy Carleton [3.]

William [3.]

—— m. ii, April 17, 1703, Margaret Mahoe [Mahant], of New Rochelle, d. Sept. 15, 1720 [2.]

Pierre M.D. b. July 25, 1704, bap. Dec. 10, 1704, by Rev. Mr. Bondet, spons. Philip Cazier and Mary Vergereau, née Mahant; d. Jan. 29, 1768, at Matawan, N. J.; m. i, March 18, 1733, Margaret Pintard (d. Jan. 30, 1736) by Rev. Gerardus Haerghoordt, no issue; m. ii, Jan. 9, 1737, by Wm. Brimley, j. p., Valeria Eatton (b. Shrewsbury March 17, 1715, da. John Eatton and Joanna Wardle of Eattonville; d. 1788 in Orange) [1, 2, 3, 4, 5, 6, 13.]

William b. March 20, 1738, bap. April 12, 1738, by Rev. J. Mills; spons. fath. moth. and Joseph Eatton; d. Savannah Nov. 4, 1788; m. May 6, 1782, Elizabeth Lawrence [1, 3, 4, 5.]

John Eatton b. Sept. 2, 1739, bap. Nov. 25, 1741. by Rev. W. Tennant; d. New Jersey Jan. 11, 1822; m. 1776, Jane Sloan [1, 3, 4, 5.]

William b. March 4, 1777; d. at New York Oct. 23, 1807 (1806?—1, 3, 4, 13) [5.]

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[Children of John Eatton (b. 1739), continued.]

Louis b. Shrewsbury N. J. Aug. 4, 1782; d. Jan. 9, 1838; m. in Georgia Jan. 30, 1812, Ann Quartermann, b. Oct. 26, 1793; d. Dec. 24, 1826 [1, 3, 4, 5, 13.]

William b. Liberty Co. Ga., Nov. 18, 1812; d. Jan. 25, 1841; m. Nov. 10, 1833, Sarah A. Nisbet [3, 4.]

James Nisbet m. Mary Gordon [3, 4.]

Ann m. Clifford Anderson [3, 4, 13.]

Sarah Nisbet [3.]

Halbert [3.]

William LeConte [3.]

Clifford [3.]

James LeConte [3.]

Louis Joseph [3.]

Mary Lee [3.]

Anne [3.]

Robert Lanier [3.]

Ophelia [3.]

Custis Nottingham [3.]

Laura Boykin [3.]

Ethel [3.]

William Louis m. Virginia Trimble [3.]

William Louis [3.]

James [3.]

Nisbet [3.]

Sarah Ophelia m. Frank H. Stone [3.]

Charles [3.]

William [3.]

Henrietta [3.]

Sarah Ophelia [3.]

Anna Louisa [3.]

Frank LeConte [3.]

Clifford [3.]

Mary [3.]

Josephine [3.]

Walker [3.]

Jane b. Woodmanston, Ga., Nov. 23, 1814; d. San Francisco Oct. 28, 1876; m. Dec. 12, 1833, John M. B. Harden, M.D. [3, 4.]

Lewis LeConte d. 1839? [3, 4.]

Matilda Jane m. T. Sumner Stevens [3.]

Annie Rosa [3.]

John LeConte m. Anne Way [3.]

Louis LeRoy [3.]

William Sumner [3.]

John Samuel [3.]

Ada Rosalie [3.]

Mary Lillian [3.]

Anne Eliza m. C. B. Adams, M.D. [3, 4, 13.]

Cornelius [3.]

David [3.]

John Harden [3.]

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[Children of Jane (b. 1814), continued.]
Ada Louisa [3.]
Elizabeth b. 1816, d. 1818 [3, 4.]
John b. Woodmanston, Ga., Dec. 4, 1818; m. July 20, 1841, Eleanor Josephine Graham, b. New York, July 22, 1824 [3, 4.]
Mary Tallulah b. Savannah, Ga., Feb. 23, 1843; d. Columbia, S. C., March 2, 1868 [4.]
Louis Julian b. Savannah, Ga., March 3, 1845; m. 1880, Oakland, Cal., Mary Harmon [4.]
John Cecil b. Athens, Ga., Jan. 21, 1850; d. Oakland, Cal., Nov. 19, 1870 [4.]
Lewis b. Woodmanston, Ga., Jan. 7, 1821; d. Oct. 20, 1851; m. July 25, 1843, Harriet Nisbet.
Harriet Eveline [3.]
William d. Nov. 4, 1876 [3.]
John Nisbet [3.]
Louis Eatton m. Caroline Adams [3.]
Eva [3.]
Caroline [3.]
Joseph b. Woodmanston, Ga., Feb. 26, 1823; m. Jan. 14, 1847, Caroline Elizabeth Nisbet, b. at Athens, Ga., Jan. 1, 1828 [3, 4.]
Emma Florence b. Milledgeville, Ga., Dec. 10, 1847; m. 1869, Farish C. Furman [3, 4.]
Katherine Carter [3.]
Elizabeth Nisbet [3.]
Sarah Elizabeth b. Cambridge, Mass., Nov. 11, 1850; m. 1877, Robert Means Davis of So. Carolina [3, 4.]
Joseph LeConte [3.]
Henry Campbell [3.]
Robert Means [3.]
Isabel b. 1884 [4.]
Josephine Eloise b. Columbia, S. C., Sept. 29, 1859, d. Sept. 12, 1861 [4.]
Caroline Eatton b. Columbia, S. C., Sept. Nov. 3, 1863 [4.]
Joseph Nisbet b. Oakland, Cal., Feb. 7, 1870 [4.]
Anne b. Woodmanston, Ga., March 26, 1825, d. Sept. 2, 1866; m. June 8, 1843, Dr. Josiah Peter Stevens, b. Nov. 17, 1818 [3, 4.]
Ella Florine b. Woodmanston, Ga., Feb. 1, 1845 [3.]
Walter LeConte b. Gordon (then Cass) Co., Ga., June 17, 1847 [3.]
Josiah Percy b. Lumpkin, Stewart Co., Ga., March 23, 1852; m. Jeannie Alexander [3.]
Louis Oliver b. Walthonville, Liberty Co., Ga., March 1, 1856 [3.]
Anna Louisa b. Baker Co., Ga., Aug. 21, 1860; d. Oct. 4, 1867 [3.]
Mabel Caroline b. Walthonville, Ga., July 30, 1862; d. Decatur, Ga., Aug. 31, 1874 [3.]
John Eatton b. Shrewsbury, N. J., Feb. 22, 1784; d. Philadelphia, Nov. 21, 1860; m. July 22, 1821, Mary Anne Hampton Lawrence, da. Jonathan Hampton Lawrence and Joanna Blanchard [1, 2, 3, 4, 5.]
Edward b. May 10, 1822; d. Feb. 9, 1823 [1.]
Edward b. Nov. 5, 1823; d. Jan. 25, 1824 [1.]

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[Children of John Eatton (b. 1784), continued.]
John Lawrence b. New York, May 13, 1825; d. Philadelphia, Nov. 15, 1883; m. Philadelphia, Jan. 10, 1861, Helen S. Grier, da. Hon. Robert C. Grier and Isabella Rose [1, 3, 5.]
John Eatton b. Jan. 17, 1862 [5.]
Isabella Rose b. July 10, 1863; d. Aug. 26, 1863 [5.]
Robert Grier b. July 17, 1865 [5.]

Margaret b. July 11, 1741, bap. Nov. 25, 1741, by Rev. W. Tennant; d. Sept. 9, 1812; m. Rev. Jedediah Chapman, who was b. Sept. 27, 1841; d. May 22, 1813, and by first wife, Blanche Smith, had William Smith, Robert Hett, John Hubbard [5, 13.]

Peter LeConte b. Jan. 8, 1778; d. Sept. 17, 1836; took name of LeConte and m. Jerusha Bishop (the following from History of the Chapman family).
Margaretta b. July 19, 1806, m. Abraham Myers.
LeConte.
Gustavus Adolphus.
William b. June 5, 1808, d. Dec. 12, 1850.
Chlorinda b. April 16, 1810, d. July 17, 1842; m. April 25, 1839, George Miller (no issue).
Mary b. Aug. 28, 1812.
Robert b. Jan. 23, 1815, d. Nov. 30, 1842.
Porter [Rev.] b. Feb. 27, 1817, d. Aug. 16, 1847; m. Sept. 24, 1846, Anna Brooks (no issue).
Caroline b. Sept. 28, 1819; m. May 1, 1849, Cornelius V. H. Morris (one daughter).

John Thomas b. April 24, 1779; m. Elizabeth Tooker (nine children).
Valeria Maria b. ——, d. Oct. 31, 1847; m. Oct. 11, 1808, James Reynolds (four children).

Thomas b. June 23, 1747, bap. July 26, 1747, by Rev. W. Tennant; d. Georgia Sept. 27, 1770 [1, 5.]

Peter b. April 13, 1751, bap. May 19, 1751, by Rev. W. Tennant; d. Georgia Nov. 23, 1776 [1, 3, 4, 5.]

Esther b. July 6, 1706 [1, 6.]

There are also records of the following marriages which I cannot place:
Boudewyn LeConte and Elsie Frederick, lic. May 14, 1756 [9.]
Sarah LeCont and John Sternberg, lic. Oct. 20, 1763 [8.]

The descent of Dr. LeConte on his mother's side—a Lawrence—is as follows: William Lawrence, who died in 1680, married Elizabeth Smith. Their son Joseph had a son Jonathan, who was born in 1690 and died in 1775. His son Isaac, born in 1729 (d. 1781), married Mary A. Hampton. Their son, Jonathan Hampton (b. 1763, d. 1844), married Joanna Blanchard, and had Mary Anne Hampton Lawrence, who married Major LeConte.

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ERRATA.

p. i. 20th line from bottom, *for* contact, for, *read* contact; for.
11th " " *for* to France, *read* in France.
7th " " *for* than title, *read* or title.
3d " " *for* plebian, *read* plebeian.
p. ii, 1st line, *for* LeConte, *read* LeComte.
p. iii, 14th line, *for* come, *read* comes.
p. iv, 7th line, *for* Schrewsbury, *read* Shrewsbury.
p. v, 7th line, *for* ranks, our, *read* ranks; our.
16th line, *for* examples, but, *read* examples. But.
p. viii, 19th line, *for* Puellia, *read* Ruellia.
p. xii, 10th line from bottom, *for* Rhyncophera, *read* Rhynchophora.
p. xiv, line 25, *for* howeper, *read* however.
p. xvi, line 22, *for* zones, as, *read* zones. As.

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PROCEEDINGS
OF THE
MONTHLY MEETINGS
OF THE
ENTOMOLOGICAL SECTION
OF THE
ACADEMY OF NATURAL SCIENCES,
PHILADELPHIA.

SEPTEMBER 14, 1883.

Vice-Director Dr. HORN in the chair.

The following additions to the Library of the American Entomological Society were announced:—

Entomologists' Monthly Magazine, Nos. 230–232. From the Conductors.

Canadian Entomologist, vol. xv, Nos. 6–8. From the Editors.

Papilio, vol. iii, Nos. 5–6. From the Editor.

Psyche, vol. iv, Nos. 109, 110. From the Editors.

Proceedings of the Boston Society of Natural History, sig. 9, 1883. From the Society.

General Index to the thirteen annual reports of the Entomological Society of the Province of Ontario, 1870–82. From the Society.

Proceedings of the Academy of Natural Sciences of Philadelphia, 1883, part 1. From the Academy.

Revue Mensuelle d'Entomologie, pure et appliqués, par Wladimer Dokhtouroff, vol. i, No. 1. From the Author.

Verhandlungen der Kaiserlich-Königlichen Zoologisch-botanischen Gesellschaft in Wien, vol. xxxii, 1882. From the Society.

Offenes Schreiben als antwort auf herrn Baron Osten Sacken's Critical Review, von Friedrich Brauer. From the Author.

Comptes-Rendus des Séances de la Société Entomologique de Belgique, Serie iii, Nos. 33–35. From the Society.

Archivos do Musen Nacional do Rio de Janeiro, vols. 3–5. From the Museum.

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The following papers were read for publication:—

Synopsis of the Apionidæ of the United States, by John B. Smith.

Revision of the United States species of Anomala, by George H. Horn, M. D.

Revision of the United States species of Notoxus and Mecynotarsus, by George H. Horn, M D.

On the North American Asilidæ (Dasypogoninæ, Laphrinæ), with a new genus of Syrphidæ, by S. W. Williston, M. D.

Dr. Horn called attention to the numerous independent publications now appearing in Europe, some of which contain descriptions of species from our fauna. From the style of the publications and the character of some of the descriptions, the publishers and authors seem to favor rapid publication of names rather than permanent benefit to science.

Dr. Horn also called attention to a recent paper in the "American Naturalist," by Dr. Packard, on the "Genealogy of Insects," in which some remarkable views were expressed. The generalizations on larvæ, and the deductions therefrom, did not agree with Dr. Horn's experience, more particularly in the comparisons of the mouth parts of Elateridæ and Carabidæ.

October 12, 1883.

Vice-Director Dr. Horn in the chair.

The following additions to the Library of the American Entomological Society were announced:—

Proceedings of the Zoological Society of London, 1882, part 4; 1883, part 1. From the Society.

Transactions, Proceedings and Report of the Royal Society of South Australia, vols. iv and v. From the Society.

Entomologists' Monthly Magazine, No. 233. From the Conductors.

Deutsche Entomologische Zeitschrift. herausgegeben von der Deutschen Entomologischen Gesellschaft, vol. xxvii, No. 2, 1883. From the Society.

Annales de la Société Entomologique de Belgique, vol. xxvi, 1882. From the Society.

Horae Societatis Entomologicae Rossicae, vols. xv and xvi. From the Society.

Mittheilungen der Schweizerischen Entomologischen Gesellschaft, vol. vi, Nos. 7–9. From the Society.

Matériaux pour la Faune Entomologique de la province de Limbourg, Coléoptères deuxieme Centurie, par A. P. de Borre. From the Author.

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Matériaux pour la Faune Entomologique de la province du Luxembourg Belge, Coléoptères deuxieme Centurie, par A. P. de Borre. From the Author.

The Publication Committee reported in favor of the acceptance of the four papers read at the last meeting. Report approved and publication ordered. The following paper was presented for publication:—

Descriptions of new Psocidæ in the collection of the American Entomological Society, by S. Frank Aaron.

Dr. Horn stated that he was preparing a paper on our native Philonthi, and gave briefly some of the points of structure which would enable the large mass of species to be divided into such smaller groups as would enable them to be more conveniently handled.

NOVEMBER 9, 1883.

Vice-Director Dr. HORN in the chair.

The Publication Committee reported in favor of the publication of the paper presented by Mr. S. F. Aaron at last meeting. Report accepted and publication ordered.

The following papers were presented for publication:—

Synopsis of the Cucujidæ of America north of Mexico, by Lieut. T. L. Casey, U. S. A.

Descriptions of some new blind Bembidii, by W. Ehlers, Cartagena, Spain.

Synopsis of the Trichopterygidæ of North America, by Rev. A. Matthews, England.

Synopsis of the Philonthi of the United States, by George H. Horn, M. D.

Short Studies of North American Coleoptera, by John L. LeConte, M. D.

Dr. Horn exhibited two specimens of a *Plusiotis* recently collected by Dr. H. C. Wood, in Texas, near the Rio Grande. The insect is a pale malachite green, narrowly bordered with pale gold, the elytra are not striate, but with rows of fine punctures, the tarsi are beautifully violet. The general facies of the insect is that of a *Chrysina*. For the species Dr. Horn proposed the name *Plusiotis Woodi*, promising a more extended description in a future paper.

Dr. McCook stated that in July last he had been given a specimen of Tarantula found in some imported logs by Mr. W. A. Jenks. There

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was with it a large cocoon, from which the young had escaped. The specimen had escaped through accident, and he was unable to present any details of its habits.

Mr. E. M. Aaron recounted some experiments made on the effects of temperature upon larvæ. He found that by depressing the temperature the development of the pupa was much retarded, and the colors of the perfect butterflies made darker.

Discussion having arisen regarding the transformation of the larva to the pupa and the rapid changes in a short period, Mr. Aaron illustrated the subject from the caterpillars and Dr. Horn continued with coleopterous larvæ.

Dr. McCook moved the appointment of a Committee to make nominations for Officers and Committees for the coming year. Mr. Wilt, Dr. McCook and E. M. Aaron, were chosen.

Dr. McCook suggested that the Section express its approval of the formation of a cabinet in the museum of the Academy illustrative of the zoology of the vicinity of Philadelphia, and that the Section co-operate in the preparation of an entomological department. Agreed to.

The Chair announced that the next meeting would occur December 12th, following that of the American Entomological Society.

DECEMBER 12, 1883.

Vice-Director Dr. HORN in the chair.

Dr. Horn announced the death of our Director, Dr. John L. LeConte, on November 15th, aged 58 years, and spoke of his great services to science and to this Section. As he had been requested to prepare a biographical sketch by a society of which Dr. LeConte had been longer a member he thought it unadvisable that he should prepare one for this Section but suggested that Dr. Scudder be requested to allow his sketch, prepared for the National Academy, to appear in our publication.

The Treasurer of the Section presented the following report:—

Balance on hand Dec. 11, 1882.	$27.62
Received for dues	62.00
	89.62
Expenditures	23.85
Balance on hand	65.77

which was referred to Messrs. Horn, Pine and Knight for audit.

The Recorder read his annual report before its presentation to the Academy.

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The Committee on Nominations presented a report.

The time for the annual election having arrived, the following members were declared elected to the positions indicated:—

Director,—Dr. George H. Horn.
Vice-Director,—Dr. Henry C. McCook.
Recorder,—James H. Ridings.
Treasurer,—E. T. Cresson.
Curator,—E. M. Aaron.
Publication Committee,—J. Frank Knight, H. Skinner.

JANUARY 11, 1884.

Director Dr. HORN in the chair.

The Committee appointed to audit the accounts of the Treasurer reported having examined them and found them correct. Report adopted.

The Publication Committee reported favorably on the acceptance of the five papers presented at the November meeting for publication. Agreed to.

The following additions to the Library of the American Entomological Society were announced:—

Report of Observations on the Rocky Mountain Locust and Chinch Bug, by C. V. Riley. From the Author.

Report of observations and experiments in the practical work of the division made under the direction of the Entomologist C. V. Riley. From the Author.

Proceedings of the Davenport Academy of Natural Sciences, vol. iii, part 3, 1879–81. From the Academy.

Entomologists' Monthly Magazine, Nos. 234, 235. From the Conductors.

Canadian Entomologist, vol. xv, No. 12. From the Editor.

Insects of the Northern parts of British America, compiled by C. J. S. Bethune. From the Author.

Papilio, vol. iv, parts 1–3. From the Editor.

Reports of the experiments chiefly with Kerosene upon the Insects injuriously affecting the Orange Tree and Cotton Plant, made under the direction of the Entomologist C. V. Riley. From the Author.

Report on the causes of destruction of Evergreen Forests in Northern New England and New York, by A. S. Packard, Jr. From the Author.

Proceedings of the Boston Society of Natural History, vol. xxii, part 2. From the Society.

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Transactions of the American Entomological Society and Proceedings of the Entomological Section of the Academy of Natural Sciences, vol. x, No. 4. From the Publication Committee.

FEBRUARY 8, 1884.

Director Dr. HORN in the chair.

Dr. Horn stated that in a recent arrangement of his own cabinet of *Bembidium*, together with that of Dr. LeConte, he had noticed some synonomy which he hoped soon to make known.

A new genus of Bruchidæ, allied to *Caryoborus* and differing in the form of the claws, was exhibited by Dr. Horn.

Dr. Horn gave a summary of his study of the Philonthi which he found to be divisible into three genera: *Philonthus*, *Actobius* and *Cafius*, containing respectively 85, 23 and 10 species, which numbers he believed would be very materially increased, especially in *Philonthus*.

MARCH 14, 1884.

Director Dr. HORN in the chair.

Among the purchases attention was called to the Coleoptera portion of the "Biologia Centrali-Americana," and Dr. Horn urged the importance of acquiring the entire portion relating to Insecta.

Mr. W. H. Edwards presented the following for publication:—

Revised Catalogue of the Diurnal Lepidoptera of America north of Mexico.

Dr. Horn exhibited a series of Philonthi which had been kindly loaned him by Mr. A. Fauvel of Caen, France. Many of these were unique to Fauvel and the greater part undescribed.

Dr. McCook spoke of a project to form a school of biology either as a separate organization or in connection with one of our established educational institutions. The great importance of biological studies was alluded to as a basis for intelligent systematic work.

The Chair announced that this was the twenty-fifth anniversary of the meeting of a small number of persons who resolved on the organization of the Entomological Society of Philadelphia, the name of which in after years was changed to the American Entomological Society.

APRIL 11, 1884.

Director Dr. HORN in the chair.

The Publication Committee reported in favor of the publication of Mr. Edwards' Catalogue of Diurnal Lepidoptera. Report adopted.

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The same Committee reported that 112 pages and 8 plates of volume xi of the Transactions had been completed.

Dr. Horn exhibited some specimens of *Platypsylla castoris* which had been sent him within a few days by Mr. F. G. Schaupp, president of the Brooklyn Entomological Society; these had been obtained by beating Beaver skins as they are found in the shops of the fur dealers. The specimens were, of course, all dead when found, but in a very good state of preservation.

MAY 9, 1884.

Director Dr. HORN in the chair.

The Publication Committee reported that 156 pages and 9 plates were now published of volume xi of the Transactions.

The following additions to the Library of the American Entomological Society were announced: —

Entomologists' Monthly Magazine, Nos. 236–239. From the Conductors.

Canadian Entomologist, vol xvi, No. 1. From the Editor.

Compte-Rendus des Séancés.—Société Entomologique de Belgique, Feb. 2, 1884. From the Society.

Report of the Entomologist, Charles V. Riley, for the year 1883. From the Author.

Cistula Entomologica, part 27, Feb. 1884. By purchase.

Proceedings of the Academy of Natural Sciences of Philadelphia. Part 3, 1883. From the Academy.

Entomologisk Tidskrift, af Jacob Spangberg, vol. iv, parts 1–4, 1883. From the Author.

Bulletin of the Buffalo Society of Natural Sciences, vol. iv, No. 4. From the Society.

Bullettino della Societa Entomologica Italiana. Anno Quindicesimo. Parts 2 and 3. From the Society.

Psyche, vol. iv, Nos. 107–118. From the Editors.

Archivos do Museo Nacional do Rio de Janeiro, vol. v. From the Museum.

Mission Scientifique au Mexique et dans l'Amerique Centrale Par H. de Saussure. From the Author.

Memoirs of the Boston Society of Natural History, vol.iii, Nos. 6 and 7. From the Society.

Petite Faune Entomological du Canada et particulierement de la Province de Quebec. Vol. II.

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Observations on the Augoumois Grain Moth and its parasites, by F. M. Webster. From the Author.

Matériaux pour la Faune Entomologique de la Province de Namur. Coléoptères Deuxieme Centurie, par A. P. de Borre. From the Author.

The Chair announced that the next meeting would be held June 9th, following that of the American Entomological Society.

JUNE 9, 1884.

Director Dr. HORN in the chair.

Dr. Horn stated that he was engaged on a paper to contain for the most part isolated descriptions belonging to families of Coleoptera which had been too recently monographed to make it necessary to repeat. A number of the species required the introduction of genera not as yet indicated in our fauna, among them being *Stolonis*, *Glaresis* and *Phytalus*.

The following additions to the Library of the American Entomological Society were announced:—

Proceedings of the Boston Society of Natural History, vol. xxii, part 3. From the Society.

Proceedings of the Academy of Natural Sciences of Philadelphia, 1884, part 1. From the Academy.

Papilio, vol, iv, No. 4. From the Author.

Psyche, No. 118, March, 1884. From the Editors.

Canadian Entomotogists, vol. xvi, No. 3. From the Editor.

Entomologists' Monthly Magazine, No. 240, 241. From the Conductors.

Report of the Entomological Society of Ontario, 1883. From the Society.

The Army Worm and Canker Worms, by C. V. Riley. From the Author.

On motion, the Section adjourned until September.

SEPTEMBER 12, 1884.

Director Dr. HORN in the chair.

The following additions to the Library of the American Entomological Society were announced:—

Transactions of the American Entomological Society, vol. xi, No. 2. From the Publication Committee.

Memoirs of the Boston Society of Natural History, vol. iii, No. 9. From the Society.

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Transactions of the Academy of Sciences of St. Louis, vol. iv, No. 3. From the Academy.

Proceedings of the Boston Society of Natural History, vol. xxii, Part 1. From the Society.

Papilio. Index to vol. iii, and vol. iv, Nos. 5 and 6. From the Editor.

Bulletin of the Essex Institute, vol. xiv, Nos. 7–12; vol. xv, Nos. 1–6; vol. xvi, Nos. 1–3. From the Institute.

Le Naturaliste Canadien, vol. xiv, No. 159. From the Editor.

Canadian Entomologist, vol. xvi, Nos. 4–6. From the Editor..

Third Report of the U. S. Entomological Commission. From the Commission.

Psyche. Vol. iv, Nos. 120–123. From the Editors.

Butterflies of North America, by Wm. H. Edwards, second series, Part 12. From the Author.

Bulletin of the Iowa Agricultural College. Department of Entomology, by Herbert Osborn. From the Author.

Report of the Entomological Society of Ontario, 1882, 1883 and General Index. From the Society.

Second Report of the Department of Entomology of the Cornell University, Experiment Station, by J. Henry Comstock. From the Author.

Annual Report of the Curator of the Museum of Comparative Zoology at Harvard College for 1882–83. From the Curator.

Two new and diverse types of Carboniferous Myriapods. The species of Mylacris, a carboniferous genus of Cockroaches, by Samuel H. Scudder. From the Author.

Tribute to the memory of John Lawrence LeConte, by C. V. Riley. From the Author.

An Essay on Insects Injurious to Vegetation and how to get rid of them, by Dr. C. A. Greene. From the Author.

The Fossil White Ants of Colorado, by S. H. Scudder. From the Author.

Notice on an "Illustrated Essay on the Noctuidæ of North America," by C. V. Riley. From the Author.

Report on the Isopoda, by Oscar Harger. From the Author.

On the development of certain Worm Larvæ, by J. Walter Fewkes. From the Author.

Capitalizing specific names, by C. V. Riley. From the Author.

Notes on North American Psyllidæ, by C. V. Riley. From the Author.

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Transactions of the Entomological Society of London, 1883. From the Society.

Proceedings of the Zoological Society of London, 1883. Parts 2–4. From the Society.

Journal of the Linnean Society of London, Nos. 95–100. From the Society.

Proceedings of the Linnean Society of London, November, 1880; June, 1882. From the Society.

Transactions and Proceedings of the Royal Society of South Australia, vol. vi. From the Society.

Journal and Proceedings of the Royal Society of New South Wales, 1882, vol. xvi. From the Society.

Entomologists' Monthly Magazine, Nos. 242–243. From the Conductors.

Biologia Centrali-Americana. Coleoptera, vol. i, pt. 1, pp. 1–256, 12 plates; vol. i, pt. 2, pp. 1–392, 9 plates; vol. iii, pt. 1, pp. 1–32, 2 plates; vol. iii, pt. 2, pp. 1–224, 10 plates; vol. v, pp. 1–224, 15 plates; vol. vi, pt. 1, pp. 1–320, 17 plates. By purchase.

Nova Acta Regiæ Societates Scientiarum Upsaliensis, Ser. 3, vol. xi, Fasc. 2, 1883. From the Society.

Recherches expérimentales sur les Mouvements respiratoires des Insectes, par M. Felix Plateau. From the Author.

Recherches sur la force absolue des Muscles de Invertébrés. Part 1, par M. Felix Plateau. From the Author.

Annals de la Société Entomologique de France, Ser. 6, vol. ii. From the Society.

Annales de la Société Entomologique de Belgique, vol. xxvii. From the Society.

Berliner Entomologische Zeitschrift. herausgegeben von dem Entomologischen Verein in Berlin, 1884, Heft i. From the Society.

Deutsche Entomologische Zeitschrift. herausgegeben von der Deutschen Entomologischen Gesellschaft., 1884. From the Society.

Entomologische Zeitung, herausgegeben von dem Entomologischen Vereine zu Stettin, 1883. From the Society.

Verhaudlungen des naturhistorischen Vereines der preussischen Rheinlande und Westfalens. Parts 1 and 2. From the Society.

Bullettino della Società Entomologica Italiana, vol. xv, No. 4; vol. xvi, Nos. 1 and 2. From the Society.

Verhandlungen der kaiserlich-königlichen zoologisch-botanischen Gesellschaft in Wien, vol. xxxiii. From the Society.

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Verhandlungen der Naturforschenden Vereines in Brünn, vol. xxi, Nos. 1 and 2. From the Society.

Compte-Rendus des Séancés—Société Entomologique de Belgique, Série 3, Nos. 41–47. From the Society.

Notice Nécrologique sur Jules Putzeys, by A. P. de Borre. From the Author.

Liste des Mantides du Musée Royal d'Historie Naturelle de Belgique, par A. P. de Borre. From the Author.

Matériaux pour la Faune Entomologique de la Province de Liege, Coléoptères. Troisième Centurie, par A. P. de Borre. From the Author.

Matériaux pour la Faune Entomologique de la Province du Brabant, Coléoptères. Troisième Centurie, par A. P. de Borre. From the Author.

The following paper was presented for publication:—

Contributions to the Coleopterology of the United States, No. 4, by George H. Horn, M. D.

Mr. Cresson exhibited a specimen of *Aulacus fasciatus*, a very rare Hymenopterous insect, found by Mr. H. Skinner in Fairmount Park. The cabinet of the Society contains but one other specimen.

The Director stated that during the past two weeks the Entomological Club of the Biological Section of the American Association for the Advancement of Science had held several meetings, two of which were held in the rooms of our Section.

Dr. Horn exhibited a small mass of Copal containing a Hymenopterous insect which Mr. Cresson identfied as belonging to the Braconidæ.

Dr. Horn reported that he had collected the manuscript of our late Director, Dr. LeConte, and had prepared them for publication under the title given at the November meeting of 1883.

November 14, 1884.

Director Dr. Horn in the chair.

The Publication Committee reported in favor of the acceptance of the paper presented at the September meeting.

Dr. Horn stated that the posthumous paper by Dr. LeConte, which he had edited, was now in type, and would form the initial paper of volume xii of the Transactions.

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Dr. Horn requested permission to divide the paper presented by him at the September meeting so that the several titles may more accurately indicate the contents of the parts. Permission granted.

Dr. Horn then offered the following titles, in addition to the original title which covers the miscellaneous material:

"A study of some genera of Elateridae."

"A study of the species of Cryptobium of North America."

"Studies among the Meloidae."

"Description of new North American Scarabaeidae."

The following additions to the Library of the American Entomological Society were announced:—

Proceedings of the Boston Society of Natural History, vol. xxii, sig. 1, Sep. 1884. From the Society.

Psyche. Vol. iv, Nos. 124, 125. From the Editors.

Canadian Entomologist, vol. xvi, No. 7. From the Editor.

Entomologists' Monthly Magazine, Nos. 244–246. From the Editor.

Guide to practical work in Elementary Entomology, by J. Henry Comstock. From the Author.

Entomologisk Tidskrift, ap J. Spangberg, parts 1–2, 1884. From the Author.

Biologia Centrali-Americana. Coleoptera, vol. i, part 1. Supplement pp. 257–312, 1 plate; vol. iii, part 2, Supplement, pp. 225–240, 1 plate; vol. iv, part 1, pp. 1–56, 1 plate.—Rhynchota-Heteroptera, pp. 1–296, 26 plates.—Rhynchota-Homoptera, pp. 1–24, 3 plates.—Hymenoptera, pp. 1–128, 6 plates.—Lepidoptera-Rhopalocera, vol. i, pp. 1–352, 37 plates.—Lepidoptera-Heteroptera, vol. 1, pp. 1-88, 8 plates.—By Purchase.

On motion a Committee consisting of Mr. Skinner and Mr. Blake was appointed to prepare nominations for ballot in December.

The Chair announced that the next meeting would be held December 8th, after the meeting of the American Entomological Society.

DECEMBER 8, 1884.

Director Dr. HORN in the chair.

The Treasurer of the Section presented the following report:—

Dr.—To balance from last account	$65.77
" Receipts from dues	54.00
Total	119.77
Cr.—By Expenses	.....
Balance to new account	119.77

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Mr. Blake moved that the sum of $10. be appropriated to pay Mr. Coburn for his care of the room, which was adopted.

The Director suggested that it would be well to make an effort to put into shape the Entomological Collection of the Section and for the improvement of the same, whereupon Mr. Aaron moved that $25. be placed in the hands of the Conservator for the purpose of enabling him to arrange the foreign collection now in the custody of the Section. The motion was approved.

Mr. Aaron offered the following Resolution: Commencing with January 1885 the Section hold its meetings on the 4th Monday night of each month, instead of the 2d Friday night as heretofore, excepting during the months of July and August, when no meeting will be held. Adopted.

The report of the Committee on Nominations was taken up and read. The Section then proceeded to an Election, and the following named persons were declared elected officers for 1885.

Director,—George H. Horn, M. D.

Vice-Director,—Henry C. McCook, D. D.

Recorder,—James H. Ridings.

Treasurer,—E. T. Cresson.

Conservator,—Henry Skinner, M. D.

Publication Committee,—Henry Skinner, M. D., Eugene M. Aaron.

The following additions to the Library of the American Entomological Society were announced:—

Proceedings of the Boston Society of Natural History, vol. xxiii, sig. 3, 1884. From the Society.

Bulletin of the Essex Institute, vol. xvi, Nos. 4–6. From the Institute.

Annual report of the Curator of the Museum of Comparative Zoology, for 1883–4. From the Curator.

Canadian Entomologist, vol. xvi, Nos. 8–9. From the Editor.

Revision of the Stenini of America north of Mexico, by Lieut. Thos. L. Casey. From the Author.

Entomologists' Monthly Magazine, No. 247. From the Conductors.

Correspondenzblatt des Entomologischen Vereins, No. 1, October 1884. From the Society.

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TRANSACTIONS

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VOLUME XI.

On the North American ASILIDAE (Dasypogoninae, Laphrinae), with a new genus of SYRPHIDAE.

BY S. W. WILLISTON, M. D.

In the following pages I have endeavored to tabulate the genera of *Dasypogoninae* and *Laphrinae* from the United States. The genera *Sphageus* from Cuba, *Archilestris*, *Lastaurus*, *Megapoda* and *Pseudorus* from Mexico and *Psilocurus* from Texas are not included, all of which have but one known species each. *Dizonias* (1 sp. Tex. and Fla.) and *Blacodes* (1 sp. Texas) are unknown to me and their positions have hence from necessity been wholly drawn from figures and descriptions. On the other hand there are added *Triclis*, *Habropogon*, *Hyperechia* and *Maria*, not hitherto recorded from North America; whether correctly or not the detailed descriptions I trust will show. A new generic name is also proposed, and the earlier name of *Deromyia* adopted for the species of *Diogmites*. *Laparus? pictitarsis* Bigot from California does not belong in that genus, nor can it be well placed with *Callinicus* to which it is most nearly allied. Moreover several species now placed under *Cyrtopogon* are provisional, and will some time require generic separation. Altogether then, with the genera and species herein added, thirty-five genera with one hundred and twenty-five species of *Dasypogoninae* and eleven genera with fifty species of *Laphrinae* represent the extent of our knowledge in these two sub-families in North America.

The *Asilinae* are but little known. From the Western regions I know three species of *Mallophora*, three of *Promachus*, three or four of *Proctacanthus*, five or six of *Erax*, with others of *Tolmerus*, *Machimus*, and a number whose positions I am in doubt about. *Ommatius*, two species of which I know from New England and Georgia, I have not yet seen elsewhere.

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In using the table, the terminal spur of the front tibiae should be sought for with care; in some of the species it is very small. It lies across the inside of the joint between the tibia and metatarsus, and is more or less oblique and bent.

Table of genera of the N. A. DASYPOGONINAE *and* LAPHRINAE *(north of Mexico).*

A.

DASYPOGONINAE.—Marginal cell of the wing open

1.—Front tibiae with a terminal claw like spur.... ....27.
Front tibiae without such spur.... 2.
2.—Pulvilli rudimentary or wanting....3.
Pulvilli normal....4.
3.—Face very narrow; abdomen very long, slender, narrow on proximal part; hind legs elongate, slender....**Leptogaster.**
Face moderately narrow; abdomen not unusually long, broader at base; hind legs not elongate....**Ablautatus.**
4.—Head narrow, about as high as broad; face narrow above, broader and swollen below, in large part covered with hair. Large elongate species...5.
Head very obviously broader than high....7.
5.—Antennae with a terminal style....6.
Third joint of antennae very long, without style: fourth posterior cell closed before the border of the wing. Black species with or without red on the abdomen....**Ospriocerus.**
6.—First posterior cell open, not closed before the border of the wing. **Stenopogon.**
First and fourth posterior cells closed before the border of the wing; third joint of antennae shorter, style longer....**Scleropogon.**
7.—Fourth posterior cell closed before the border....8.
Fourth posterior cell wide open, rarely nearly closed....12.
8.—Antennae elongate, of five joints (*Myelaphus*)....13.
Antennae not elongate, of three joints, and a terminal style....9.
9.—Face bare, except on oral margin; abdomen elongate, cylindroidal; anterior intercalary vein continuous, or nearly so, with the fourth vein, the last section of fourth vein oblique, sinuous, closing or much narrowing the broad first posterior cell. Large, or very large species....**Microstylum.**
Face pilose or hairy, more convex....10.
10.—Abdomen cylindrical, not narrow at the tip, elongate; near the base of second and third segments with white pollinose emarginate cross-bands; wings blackish....**Dizonias.**
Abdomen less elongate, with five or six white pollinose cross-bands....11.
11.—First posterior cell open, scarcely narrowed, face broad....**Laphystia.**
First posterior cell much narrowed, or closed....**Triclis.**
12.—Antennae elongate, composed of five joints; nearly bare species....13.
Antennae less elongate or short, of three joints, with or without a short or slender style....14.
13.—First and second joints of antennae of nearly equal length, third elongate, fourth short, fifth elongate and densely pubescent, third and fourth not lobed at tip....**Ceraturgus.**

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First joint about three times as long as the second, third elongate, fourth and fifth of nearly equal length, third and fourth at the tip with two lobes, or processes, reaching to about the middle of the following joint. **Myelaphus.**

14.—Style of antennae short, thick. obtuse, not easily distinguished from the third joint, or if so, forming an apparent joint. Small or rather small species, nearly bare, shining or metallic black, with narrow or cylindrical abdomen and large wings; face flattened, bare except below, hind tibiae pilose on the inner side.....15.

Terminal style small, more slender than the joint, apparent, antennæ shorter if elongate and style indistinguishable; the species not bare but thickly pilose.....16.

15.—All the tibiae and the hind femora with short strong setæ.....**Ecthodopa.**

Hind femora without such setæ.....**Dioctria.**

16.—Face distinctly convex in profile, swollen or gibbose*.....17.

Face flattened or gently convex.....19.

17.—Head as broad or broader than the thorax, front at base of antennae flattened, not projecting in profile; terminal style of antennae slender or differentiated from the joint.....18.

Head narrow. Antennae situated upon a convexity, thence receding to the facial tubercle which is at the lower part of the face; antennae elongate, style short, obtuse; abdomen short; thickly pilose species, the bristles few and hair-like.....**Dicolonus.**

18.—Thickly pilose species: the gibbosity of the face reaches to the base of the antennae; anal cell usually open*.....**Cyrtopogon.**

Thinly pilose, more pollinose species, the convexity of the face on the lower part, anal cell usually closed.....**Danlopogon.**

19.—Abdomen elongate; front broad anteriorly, narrow behind...**Plesiomma.**

Front not narrowed behind.....20.

20.—Hind tibiae toward the tip, and their metatarsi, much thickened.....21.

Hind tibiae not, or but slightly, thickened toward the tip; metatarsi not thickened.....22.

21.—Head much broader than high, transverse, "goggle" like; abdomen short, wings large.....**Holocephala.**

Head only moderately broader than high, not at all spectacle-like in appearance.....**Holopogon.**

22.—Abdomen with thick recumbent pile above; thickly pilose species; antennae slender.....**Pycnopogon.**

Abdomen without such pile above.....23.

23.—Slender, nearly bare species; face perpendicular, straight or gently concave, narrowed above. bare, except on oral margin.....24.

Face gently rounded, not prominent below, in large part hairy, not or but slightly narrowed above.....25.

24.—Thickly whitish pollinose; abdomen flattened, usually reflected upward, third joint of antennae and style both slender.....**Stichopogon.**

---

* Several species are placed provisionally under *Cyrtopogon* in which the facial gibbosity is small, and the body thinly pilose. They may be distinguished by the abdomen not being broad, and having white pollinose cross-bands; in some the wings have small but distinct clouds on the cross-veins.

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Less thickly pollinose; abdomen cylindrical, a little broader at base; third joint of antennæ short, broad, style minute.....? **Habropogon.**

25.—Large, elongate species, style of antennæ short.....**Callinicus.**

Moderately large, not much elongate.....26.

26.—Abdomen broader at the base, depressed; thorax much convex above, antennæ slender, style long and slender (compare species of *Cyrtopogon*).

Anisopogon.

Abdomen short, cylindrical, antennæ moderately long, style short. Black with bright golden yellow opaque pollinose markings on thorax and abdomen.....**"Laparus?"** (pictitarsis Big.)

27.—Large species; face bare with bristles on the oral margin, in profile straight or concave, the oral margin projecting.....28.

Smaller species; face convex on lower portion, not projecting.....29.

28.—Elongate; fourth posterior cell closed, usually a considerable distance before the margin.....**Deromyia.**

Less elongate; fourth cell open or closed in the margin, rarely a little petiolate.....**Saropogon.**

29.—Head broad and flat, face not gibbose, third joint of antennæ slender, elongate.....30.

Head only moderately broader than high; face gibbose below; third joint of antennæ more or less dilated, style very short; thorax and legs with numerous bristles; abdomen broadest at the base, rather slender, subcylindrical.

Lestomyia n. g.

30.—Abdomen finely punctulate, of nearly equal width, hind tibiæ at the tip and their tarsi only a little thickened; wings hyaline.....**Taracticus.**

Abdomen smooth; hind tibiæ at their tip and their tarsi thickened (compare here *Nicocles? scitula*); antennal style slender, acuminate; wings variegated.....31.

31.—Abdomen flattened; in the female a little broader beyond the middle; in the male near the tip, the last two segments of which conspicuously silvery.

Nicocles.

Abdomen of nearly equal width throughout, the last segment in the male not silvery, fourth posterior cell narrowed.....**Blacodes.**

B.

LAPHRINAE.—Marginal cell of the wing closed, antennæ without a terminal bristle.

1.—The veins at the distal ends of the discal and fourth posterior cells in the same straight line, continuous, or nearly so.....2.

The veins, etc., not in the same straight line, the vein closing the fourth posterior cell more or less remote and oblique.....3.

2.—First joint of antennae elongate, slender; second posterior cell narrowed toward the margin of the wing.....**Cerotainia.**

First joint of the antennæ much shorter than the third; first posterior cell narrowed or closed, the second wide open.....**Atomosia.**

3.—First posterior cell narrowed or closed.....4.

First posterior cell wide open.....6.

4.—Three submarginal cells, i. e. the upper branch of the third vein is connected with the second by a short vein.....**Pogonosoma.**

Two submarginal cells.....5.

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5.—Hind femora of nearly equal thickness throughout; antennæ with a distinct terminal style; very large, robust, thickly pilose species....**Hyperechia.**
Hind femora thickened toward the end; antennæ without terminal style; more elongate, less pilose species.....**Andrenosoma.**
6.—Thorax and abdomen nearly or quite bare.....7.
Thorax and abdomen thickly pilose, larger species.....8.
7.—Hind femora with spinous tubercles below.....**Lampria.**
Hind femora without spinous tubercles below.....**Maira.**
8.—Densely pilose species; the abdomen short, broad, usually broader beyond the middle, in the male sometimes more elongate; proboscis thick....**Dasyllis.**
Less pilose, more elongate species; proboscis more elongate and slender.
Laphria.

MYELAPHUS.

Bigot, Bulletin Soc. Ent. de France 1882, No. 9, p. 112.
Ceraturgus Osten Sacken (parte).

This proposed new genus of *Dasypogoninæ* has been insufficiently characterized by its author, with a very brief diagnosis of the type species as follows:

"**Myelaphus melas** ♂.—Long. 15 mm. *Totus niger, abdomine nitido; halteribus et pulvillis flavis; alis nigris, intus et apice parum dilutioribus. Oculis nudis.*—California."

I have before me a specimen which I believe to be this, together with two other species closely allied, and which appear to offer sufficient characters to justify their separation from *Ceraturgus*, under which one of them had been described by Baron Osten Sacken. From the light that these species afford on the value of the characters in this genus and *Ceraturgus* it seems desirable to give the structural and specific characters in detail.

Head broader than the thorax, considerably broader than high. Face a little less than a third as wide as the head, its sides very nearly parallel, diverging but very slightly below, bare, smooth and shining, on the oral margin in front with a thin row of moderately long bristles; in profile gently receding, above the middle with a moderately large obtuse tubercle (wanting in *M. lobicornis*), not reaching quite as far forward as the base of the antennæ, between which it is gently concave, and below the tubercle to the oral margin considerably receding, nearly straight; the oral margin in front is distinctly above the lower borders of the eyes, so that the lateral margins of the mouth are considerably oblique, and straight. Antennæ situated upon a large obtuse tubercle, about as long as the dorsum of the thorax, composed of five joints as in *Ceraturgus*, all of which are distinctly separated from each other: first joint cylindrical, elongate, rather more than three times as long as the second; second joint short, but little longer than broad; third joint distinctly longer than the first two together, somewhat compressed, only a little broader, terminating in two lateral lobes, or processes, which extend as far as the insertion of the second joint of the style; fourth joint, or first joint of the style, somewhat Y shaped, the terminal lobes being rather more than one-half of the entire length of the joint, longer and more slender than those of

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the third joint; fifth joint, or second joint of the style, longer than the entire length of the preceding, narrowed, almost pedicellate at the base, flattened beyond the tip of the lobes of the preceding joint, and then obtusely pointed, somewhat irregular in shape and shallowly sulcate, clothed with very fine short pile.

Thorax convex, nearly bare, wholly without macrochaetae except a few very short intra-alar ones. Legs rather stout, without macrochaetae except a few short ones at the tips of tibiae and the basal tarsal joints. Wings as in *Ceraturgus cruciatus*, but broader, marginal and first posterior cells open; the posterior intercalary vein arises from the posterior basal transverse vein a short distance from the base of the discal cell. In *M. melas* the type and *M. rufus* (new sp.) the fourth posterior cell is broadly open, in *M. lobicornis* closed and petiolate. Anterior cross-vein near middle of the discal cell.

Abdomen in structure rather like that of *Dioctria*, shorter than the wings, the sides nearly parallel, or gently concave, to the tip of the fifth segment in the male, in the female the fifth segment gently narrowed behind; a little narrower than the thorax in the male, in the female about as wide; flattened, so that transversely it is only gently convex above, gently grooved at the incisures, each segment being gently convex longitudinally; smooth, nearly bare, except sparse very short pile; segments of nearly equal length, the sixth a little shorter, the seventh very short. Hypopygium small.

This description is drawn from a male of *M. melas* and a female *M. rufus* which agree closely in structure. In *M. lobicornis* the antennal protuberance is more obtuse, and the face more flattened, in profile very narrow, and the prominence near the middle wholly wanting. The fourth posterior cell is also closed a little before the margin of the wing, and the first posterior cell strongly coarctate.

From the diagnosis of this genus given by Mr. Bigot, there are some differences, which might render the recognition doubtful. The antennae are not as long as the head and thorax combined, but considerably shorter, and the third joint is at least a half longer than the first; the third joint has *two* processes like the fourth joint. There are but two joints in the style, as in *Ceraturgus*. From the irregular shape of the last joint, it might be thought to be divided, but such is not the case. Three joints in the style would be anomalous I think.

1. **Myelaphus melas.**

? *Myelaphus melas* Bigot, l. c.

♂.—Black, abdomen shining; halteres and pulvilli yellow; wings black, more dilute behind and at the tip. Length, 14½ mm. Face smooth, shining, bare, in the middle on the tubercle broadly and indefinitely pitchy red; bristles on the oral margin yellowish white with one or two black ones on the sides; beard short, sparse, black. Front on the sides near the eye with a few short black bristles. Antennae wholly black; on the upper sides of the first and second joints, with a few short black hairs. Thorax deep shining black, above with a blue reflection, the dorsum wholly without markings, but covered with very short sparse black hairs; a minute spot on the humeri red, and the post-alar callosities pitchy black. Pleurae very smooth, shining, except on the upper part of the sternopleurae,

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and on the mesopleurae, where it is moderately thickly covered with short pile, black above, whitish below. All the coxae on their outer sides with sparse whitish pile, and at their lower ends with a few short whitish bristles. Halteres yellow, the extreme base a little brownish. Abdomen shining black, with very short, rather sparse black hairs, slightly intermixed with whitish on the sides of each segment; on the hypopygium with longer light yellowish or whitish pile. Legs deep black, the front and middle knees very narrowly yellowish, the pulvilli and base of claws light yellow: on the front tibiae below, their tarsi and on the middle tarsi less so, with reddish pubescence. Wings blackish on the anterior portion toward the base, along the posterior and outer part more dilute, but still slightly tinged with brown or blackish; first posterior cell not at all narrowed at the margin, fourth posterior cell broadly open, the fifth vein at the tip slightly curved backward.

One specimen, Kern Co., California.

2. **Myelaphus rufus,** n. sp.

♀.—Yellowish red; third joint of antennae and the style, proboscis, occiput, three broad, abbreviated stripes on the dorsum of the thorax, two spots on the lower part of pleurae, and tips of claws black. Length 17 mm.

Face, front, and first two joints of antennae reddish yellow, shining, the face below, near the eyes, and on each side of the base of the antennae lightly yellowish dusted. Bristles of the oral margin yellowish white; on the sides of the front a few shorter ones yellow. Third joint of antennae and the style deep black. Proboscis black, the palpi yellowish. Occiput black, thickly yellowish pollinose on the sides; occipito-orbital bristles short, thin, and like the sparse short beard below are yellow. Dorsum of thorax yellowish red, with three broad black stripes, separated from each other by linear intervals; the lateral ones begin some distance behind the humeri and extend to within a short distance of the scutellum, on the posterior part narrow; the middle one begins at the prothorax and has well defined edges to the transverse suture, immediately behind the suture the stripe becomes obsolete. The dorsum is clothed with short, not very abundant golden pile, and has three or four short, inconspicuous, yellow, intra-alar bristles. Pleurae yellowish red, except a large spot above the middle coxae, and another nearly confluent, smaller one above the hind coxae, which are smooth, shining, pitchy black. On the mesopleurae and upper part of the sternopleurae with golden yellow pile, moderately dense; just beyond this there is a smooth shining space. Halteres yellow. Abdomen wholly red, darker, somewhat ferruginous along the dorsum; very shining and clothed with sparse, short golden pile. Legs wholly reddish yellow, the tips of the claws only black; pulvilli and the base of the tibiae lighter colored, the coxae on their outer sides with whitish pile. Wings very distinctly blackish clouded on the outer part, the veins blackish, at the base the veins and cells are yellow. First and fourth posterior cells a little more narrow at their outer parts than in *M. melas.*

One specimen, Kern Co., California (H. K. Morrison).

It is probably that, as in the following species, the wings in the male may be, not yellow, but brown or blackish toward the base.

3. **Myelaphus lobicornis.**

Ceraturgus lobicornis Osten Sacken, Western Dipt. 287.

" ♂ ♀.—Head and thorax wholly black, coxae, trochanters, more or less of the base of the four front femora, tips of tarsi, narrow base and lateral margins of

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abdomen black or blackish; legs and abdomen yellowish red. Wings in the male tinged with brown, darker, sometimes dark brown in front toward the base; in female the basal half yellowish, the posterior and distal half brownish." (Face nearly plane, without tubercle. Wings comparatively narrow; first posterior cell coarctate, fourth posterior cell closed and petiolate). Length 10-12 mm.

I have a single male specimen from Kern Co., that I believe to be this. It agrees very well indeed with the original description, except that all the femora from the very trochanters are reddish yellow, the venter is red and the wings are dark brown before the anterior cross-vein, beyond which there is a large space very nearly hyaline; the posterior portion for the whole length has a distinct blackish tinge. However, these differences are such as Baron Osten Sacken himself noted, or anticipated. The only reason that I am at all doubtful of the identity is that the author did not speak of the closed and briefly petiolate fourth posterior cell, a character, however, that is probably more or less variable. The hind femora in this species are stouter and more thickened on the proximal portion than in the preceding species.

DIOCTRIA.

4. **Dioctria nitida** n. sp.

♂ ♀.—Black shining, thorax yellow pilose and pollinose, mystax black; tibiae yellow, tips black. Length 11-13 mm.

Much like *D. albius* but larger and all the tibiae light reddish-yellow, except the tips. Face bright golden yellow, mystax and pile of the front black. Antennae in structure quite like those of *D. albius*, black. Thorax rather thickly clothed with golden-yellow pollen and pile. Pleurae shining black, with four rather small patches of dense yellowish-gray pollen, and similar ones on all the coxae, the front and middle coxae with white pile. Abdomen deep, shining, somewhat metallic, black. Legs black, front and middle tibiae except the immediate tips, and the hind pair a little more broadly, reddish-yellow. Wings nearly uniformily blackish, veins yellow at the base.

Four males and one female, Washington Territory.

5. **Dioctria albins** Walker.

From comparison of five specimens from Washington Territory with thirty from Connecticut, I am at a loss to find differences that will justify their separation.

6. **Dioctria Sackeni** n. sp.

♂.—Black, basal half of wings light yellow, distal half blackish; anterior femora below, tip of middle and hind femora, four front tibiae except their tip, and basal half of hind tibiae reddish-yellow. Length 7 mm.

Face yellow above, silvery below; mystax, pile of front, of antennae, and the beard white. Antennae black, rather acute at tip. Dorsum of thorax densely

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covered with whitish-yellow pollen, the pile of nearly the same color. Pleurae shining black, with small patches of yellowish-white pollen. Abdomen slender, wholly shining. Legs black, the front femora on the under side, the tip of middle femora and more or less along the under side, the hind femora at tip, the four front tibiae except the immediate tip and the hind tibiæ on rather more than the basal half, light reddish-yellow; hind femora much thickened. Wings on the basal half light yellow, from the cross-veins blackish.

Three specimens, Washington Territory.

This species must be very similar to the specimen mentioned by Baron Osten Sacken in his Western Diptera p. 288, from the White Mts. The hind femora are comparatively more thickened than in *D. albius*.

LAPHYSTIA.

7. **Laphystia sexfasciata.**

Dasypogon 6-fasciatus Say, J. Acad. Phil. iii, 50, 1; Compl. Wr. ii. 64; Wiedeman, Auss. Zw. Ins. i, 408, 68.

Laphyctis sexfasciatus Schiner, Verh. Zool. Bot. Ges. 1866, 698.

Laphystia sexfasciata Loew, Berlin, Ent. Zeit. 1874; 373; Osten Sacken Cat. Dipt.; Bigot, Bull, Soc. Ent. Fr. 1879, 87.

Triclis notata Bigot, Annales Soc. Entom. France, 1878, 433; id. Bull. Soc. Ent. 1879, 87.

Laphystia subfasciata Bigot, ibid. Annales 1879, 236.

The genus *Laphystia* is intermediate in position between the *Dasypogoninae* and *Laphrinae*. Our single authenticated species seems to have more affinity with *Laphystia subulicola* Lw. than with *Laphyctis gigantella* Lw. and may therefore remain in this genus. In *L. sexfasciata* the marginal cell is not closed, but distinctly open. I have therefore placed the genus under the Dasypogoninae. It resembles the following species, but has a wider face, and open first posterior cell.

TRICLIS.

Loew, Bemerk über d. Fam. Asil. 17 (1851). *Gastrichelius* Rondani.

8. **Triclis tagax** n. sp.—(Plate I, figs. 6, 6a.)

♀.—Black, whitish pollinose; head wholly with light pollen and pile; segments of abdomen with a large semicircle in front and the anterior angles shining. Wings hyaline. Length 6¼ mm.

Face thickly white pollinose, and with white hairs in the mystax, reaching nearly to the antennae; straight on the sides, in profile gently swollen below. Antennae black, first and second joints short, of nearly equal length, third broad, not longer than the first two together; style very small, short. Front faintly brownish; occiput thickly white pollinose on the sides; beard white. Thorax black, the dorsum thickly covered with short yellowish-white recumbent pile, along the middle in front a shining stripe; bristles slender, black. Pleurae thickly white pollinose, with a small shining black spot above the middle coxae; scutellum pilose with a row of thin bristles along its edge. Abdomen short, moderately broad, not much narrowed posteriorly; shining black, the posterior margins of the segments narrowly red, but obscured by the thick white pollen which leaves the black to form a large semioval spot, nearly reaching the hind margin in the

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middle and only narrowly separated from the small black spot on the anterior angles which extends to, or nearly to, the hind margin. A circle of long bristly hairs near the tip black; otherwise the short, not abundant pile, is yellowish, whitish or white. Legs black, rather thickly clothed with short fine white pile, along the under side of the hind femora and tibiae a little longer and more thickly erect pilose, as in *Dioctria;* bristles mostly white. Wings pure hyaline, the first posterior cell closed a little before or at the tip, the fourth at a considerable distances before the border.

One specimen, Kern Co., California.

On account of the closed first posterior cell I place this species under *Triclis*, with which it seems to agree otherwise very well. *Psilocurus nudiusculus* Lw. is apparently related, but the first posterior cell is wide oped.

HABROPOGON Loew.

Dactiliscus Rondani.

A single specimen of a species from California seems either to belong to this genus or is closely allied. I have no specimens for comparison. Whether the structure of the face is the same I do not know. In my specimen the mystax is confined to the oral margin as in *Stichopogon*. I give therefore briefly the structural characters of the present species. I believe the genus has never been recorded from this continent.

In structure, except the head, throughout like species of *Stenopogon*, but less pilose. Head considerably broader than high, but scarcely as wide as the thorax. Face very narrow, the eyes separated by an extremely narrow interval from the antennae; their inner margins above and below gently divergent, so that the distance between the angles below is a little greater than that above. Face in profile gently concave from antennae to oral margin, nearly perpendicular, wholly bare, except a thin short row of soft bristles on the oral margin, which is projecting as in species of *Stichopogon*, *Deromyia*, and *Saropogon;* front only gently excavated, widened above. Antennae short, first two joints of equal length, third a little longer than the first two together, broad, scarcely more than twice as long as wide, obtusely pointed at the tip and with a very small, almost microscopic style; beard short and thin. Thorax bare, except with very minute hairs, and moderately strong, not abundant bristles on the back part; scutellum with four bristles. Abdomen slender, elongate, cylindrical, broader at the base, bare. Front and middle femora with two posterior preapical, and the hind femora with an anterior row of bristles. Fourth posterior cell nearly closed.

The head and antennae may perhaps be like those of *Psilocurus*, but the face is much narrowed above, and wholly bare, except the bristles below; the abdomen is by no means "flach und gleich breit," and has a star of spines at the tip in the female.

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9. **Habropogon bilineatus** n. sp. (Plate I, fig. 8.)

♀.—Black, gray pollinose, mystax white; dorsum of thorax yellowish-gray, with two slender opaque black stripes; 1–5 abdominal segments with red borders; under side of all the femora and base of tibiae red. Length 15 mm., of wings 9 mm.

Face and mystax white, the former opaque; front a little yellowish gray, the few short bristles black. Antennae and proboscis both short black. Dorsum of thorax gray with a yellowish or brownish cast, the ground color of humeri, postalar callosities and scutellum appears to be yellowish red; in the middle two slender narrowly separated, but very distinct, opaque black stripes, obsolete in the posterior part; bristles wholly black. The ground color of the pleurae apparently in large part reddish, but concealed beneath dense, very light colored pollen, which also covers the coxae. Abdomen black, rather thinly yellowish grayish pollinose, the terminal segments more shining, the sides and posterior margins of the first—fourth segments and the sides of the fifth red; the pile is very short. Anterior and middle coxae thickly clothed with white pile. Legs black; the under side of all the femora broadly red, the base of hind tibiae and the four front tibiae, except their tip, red, or yellowish red. Wings nearly hyaline, veins black.

One specimen N. California (O. T. Baron).

DICOLONUS.

10. **Dicolonus simplex** Loew, Centur vii, 56. (Plate I, fig. 4.)

I recognize this species in two male and one female specimens from Southern California. The pile, however, appears to be lighter colored, and in only one specimen is there any black pile on the front, and none have any at the tip of the abdomen.

CYRTOPOGON.

11. **Cyrtopogon dasylloides** n. sp.

♂.—Black, thickly black pilose; mystax thick, light yellow; coxae with white pile. Abdomen, except the tip, with long, dense, furry, erect, light yellow pile; tarsi red; wings hyaline, the distal half in front blackish. Length 17 mm.

Face very thickly light yellowish pilose, on the lowest portion somewhat black; beard white. Style of antennae short, thickened. Pile of the front, occiput, and of first two joints of antennae black. Thorax thickly black pilose, dorsum nearly opaque, on the sides of the middle in front a little brownish pollinose; bristles not strong. Scutellum thickly pilose, not pollinose, convex. Abdomen nearly parallel on the sides, shining, but its shape and color nearly concealed by the very long, erect, furry, yellow pile, the first segment with a very little black pile above on the sides, and the last segment and hypopygium wholly thickly black pilose. Coxae white pilose. Legs black, densely black pilose, hind tibiae deep red, all the tarsi lighter red, the front pair with white pile. Wings hyaline, the outer half in front from the margin of the third vein blackish, a little lighter at the tip, and fading out behind.

One specimen, Washington Territory.

This remarkable species falls into the group of I. A. aa. of Osten Sacken's synoptical table (West. Dipt. p. 294) and is allied to *C. aurifex* O. S. from which it will be readily distinguished by its much larger size,

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blackish cloud on outer part of wings, red tarsi and the more abundant, denser and wholly yellow pilosity of the abdomen, except its tip.

12. **Cyrtopogon plausor** O. Sacken, West. Dipt. 297.

Four male and one female specimens from Colorado agree perfectly with the description.

13. **Cyrtopogon callipedilus** Loew, O. Sacken, West. Dipt. 296.

A female from Southern Wyoming (alt 8000) agrees throughout with the description.

14. **Cyrtopogon praepes** n. sp.

♂ ♀.—Scutellum convex above, pilose; legs densely pilose, wholly black; front tarsi of the male with a single row of silvery pile from the very base and the terminal joints of middle tarsi with a disk of black pile, longer than broad; sides of the abdomen at base white pilose, shorter and black on distal portion. Length 11—12 mm.

♂.—Black, shining. Face thickly light yellowish pollinose, but concealed beneath the dense light yellow mystax, black on the oral margin. Beard, anterior and middle coxae, first two segments of the abdomen on the sides, and all the femora below, and on the posterior part, thickly, nearly white pilose; front, upper part of the occiput, basal joints of the antennae, dorsum of thorax and scutellum, dorsum of abdomen and sides from the second segment, upper surface of femora and all the tibiae black pilose. Dorsum of thorax with two large spots on each side of the middle in front, brownish pollinose; pleurae thickly light pollinose. Legs wholly deep black, the posterior tibiae at tip and their metatarsi with golden red pubescence. Legs not very stout, nor the bristles very strong; anterior tarsi slender, on their upper side for their whole length with a row of short, dense, silvery pile, not parted, except at the tip, the surface below is smooth, but along the sides there is a fringe of very short black bristles; two last joints of middle tarsi with the disk of black pile narrower than in the other species, longer than broad. Wings nearly hyaline.

♀.—Like the male, but the face is a little more bare upon the sides, the pile throughout somewhat shorter, the dorsum of the thorax more grayish pollinose in front leaving two slender medium dark stripes; the light pile of the abdomen is less abundant and extends on the sides to the fourth segment, and the black pile very short, on the posterior angles of the second, third and fourth abdominal segments there is a small silvery spot; the pile of the femora is more obscure, the silver pile of the front, and the black disk of the middle tarsi wanting.

Two ♂ and two ♀ specimens, Washington Territory.

This species is closely allied to *callipedilus*, *cymbalista*, *plausor* and the following:

15. **Cyrtopogon** n. sp.

Represented by three males and two females from Northern California. The males throughout are nearly like *praepes*, except in the tarsi, which are shorter, and the front and middle pairs are ornamented like *cymbalista* is described to be, that is the first joint of the front pair has but little silvery

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pile, and on the other joints it is parted so as to form two rows; the joints are wholly wanting in the black bristles, and the black disk of the middle pair is very broad. The female is difficult to distinguish from *praepes*, but the front tarsi are not so slender, and on the sides of the dorsum of the thorax, in front of the suture there is a large brown pollinose spot which is wholly shining in *praepes*. There can be scarcely a doubt of the distinction of the two species, but I do not give it a name till larger collections have been examined.

16. **Cyrtopogon profusus,** O. Sacken West. Dipt. 305.

A male from New Mexico (from Mr. E. Keen) agrees very well with the description.

17. **Cyrtopogon nugator** Osten Sacken, West. Dipt. 307.

A male and female from Mt. Hood. The male has the second and third abdominal pollinose cross-bands narrowed in the middle, but entire.

18. **Cyrtopogon** n. sp.

In size, shape and abdominal markings resembling *C. nugator*, but the markings of the thorax obscure and the ungues black. The body is almost wholly without pile, except the thin white beard; the face has sparse black bristles, the dorsum of thorax and scutellum bare, except a row of bristles on each side of the former, and two on the border of the latter; the abdomen wholly bare, black, shining except the interrupted cross-bands on segments 1–6, the femora are bare, the tibiae and tarsi only with black bristles. The fan-like row of bristles in front of the halteres is black, and the species would be sought for under *posititious* or *sudator* of Osten Sacken's synoptical table. Washington Territory.

19. **Cyrtopogon dubius** n. sp.

♀.—Scutellum flattened, gray pollinose above; abdomen shining black, first segment on the sides, and the four following with interrupted posterior cross-bands of gray pollen; femora black, tibiae and tarsi dark red; head, except the beard, wholly black pilose, antennae black; wings with narrow brown clouds on the cross-veins. Length 11 mm.

Face thickly whitish pollinose and densely black pilose, beard below white, on the sides and above black. Dorsum of thorax deep blackish brown with dense gray pollinose markings as follows: A slender median stripe obsolete behind; a large spot in front of the scutellum, slenderly prolonged on its anterior angles to the middle of the dorsum, the humeri, a spot on their inner sides, another large one behind, concave on its inner border, and a smaller one on the post-alar callosities. Pleurae gray pollinose; the fan-like fringe of hairs in front of the halteres black. Abdomen with white pile on the sides in front; the last two segments wholly shining. Anterior and middle coxae, and all the femora below towards the base with long soft white pile; front tibiae on their inner sides and their metatarsi with golden pubescence; hind tibiae at their tip and the tip of their metatarsi with white pubescence, femora black, tibiae and tarsi dark red,

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the latter more brownish red. Wings hyaline in the basal half, distinctly clouded with brownish on the distal half; the veins from the margin of the second longitudinal to the beginning of the posterior basal transverse, narrowly but distinctly clouded with brown, the veins at base of the second submarginal, and the first and second posterior cells less distinctly clouded.

One specimen, Mt. Hood, Oregon.

This species will fall with *C. profusus* in Osten Sacken's synoptical table, but its relationship is apparently closer to *C. posititinus* O. S.

20. **Cyrtopogon? nebulo** Osten Sacken, West. Dipt., 309.

Two specimens from Washington Territory I believe belong here; they agree perfectly with the description, except that the style is a trifle shorter than the third joint.

21 **? Cyrtopogon** n. sp. (Plate I, fig. 11.)

Resembles *nebulo* very much, but has the third joint of the antennae and the style very slender, linear, the face less gibbose, deep shining greenish black abdomen, and the body more thickly pilose. The size and wings are the same. I identified it at first as *nebulo* before I had seen the Washington Terr. examples. Ten specimens, Como, Wyoming, (alt 8000 ft.).

22. **? Cyrtopogon** (*?Daulopogon*) n. sp. (Plate I, fig. 10.)

Has the wings of the two preceding, but the face more gibbose, the gibbosity rather lower, and the style of antennae a trifle shorter. The dorsum of thorax has the markings similar, but is more convex and compressed, and the median stripe from the very front thickly clothed with long, erect hair, giving the thorax a peculiar mane-like appearance, as in some species of *Asilinae*. The abdomen has apparently posterior cross-bands of gray pollen. The convexity of the face does not reach quite to the base of the antennae, and it may be the species would be better placed under *Daulopogon*.

One specimen, Como, Wyoming.

23. **? Cyrtopogon gibber** n. sp. (Plate I, fig. 9.)

? ? Holopogon? appendiculatum Bigot, Annales Soc. Ent. Fr., 1878, 438.

♀.—Dorsum of thorax strongly convex; front much excavated, facial gibbosity slight, hind tibiae and tarsi thickened.—Black; abdomen with narrow interrupted anterior cross-bands and small lateral spots, wings hyaline, cross-vein and costal cell at tip narrowly clouded with dark brown; anterior branch of the third vein angulated. Length 7 mm.

Face in profile only a little convex below, gray pollinose and with whitish bristles on the oval margin of the same color, but more pile-like above. Antennae black, the first two joints of nearly equal length, the third joint not twice as long as the first two together, not very slender, style acute, about half as long as the third joint, the tip with a bristle. Front much excavated on the sides of the ocellar tubercle which has a few black bristles, pile of the occiput below white,

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above black. Thorax in profile remarkably convex and high, the convexity being greater on the front part, bare except with four rows of moderately strong bristles; of a rich brown color, with an irregular white stripe on the side in front. Pleurae dark brown, lightly pollinose. Scutellum small, bare except two erect, black bristles at the tip; metanotum thickly white pollinose. Abdomen gently convex, and gently and evenly tapering from the base to the tip, brownish black, shining, with distinct gray pollinose markings, as follows: on the anterior margin of the second segment with an interrupted narrow cross-band, and a little beyond it two narrow transverse spots forming an abbreviated interrupted cross-band, near the middle and touching the lateral margin another smaller spot; third, fourth, fifth and sixth segments with an interrupted abbreviated cross-band, and a smaller lateral spot near the middle. Legs black, femora with sparse white pile, tibiae with white bristles, the posterior tibiae considerably thickened gradually from the base, the metatarsi also somewhat thickened. Wings hyaline, all the cross-veins and base of first submarginal cell, and the costa from the tip of second to the tip of fourth vein narrowly clouded with dark brown, a similar cloud at the furcation of the third vein, the anterior branch of which is angulated and with a minute stump of a vein.

One specimen, California (Baron).

This species does not belong in *Cyrtopogon*, but may be provisionally placed here till a better place is found for it. It shows some relationship to *Holopogon*, but not as much as to several of the species from the West now placed under *Cyrtopogon*. The structure appears to be the same as the species described by Bigot as *Holopogon? appendiculatus* but it cannot be the same species, as will be seen by comparison of the description of the thorax, abdomen, legs and wings. *Cyrtopogon cerusatus* O. S., must also somewhat resemble this. The convexity of the thorax, which is "Kaputzenartig" resembles very much that of *Pseudorus bicolor* Bell as figured by Bellardi, and is seen in a less degree in our species of *Holcocephala*. The face in profile is gently convex from the antennae to the oral margin, but is most projecting below. The species is very thinly pilose.

PYCNOPOGON.

24. **Pycnopogon cirrhatus** Osten Sacken, West. Dipt. 293.

A single male specimen from Northern California. The dorsum of the thorax is short black pilose across the middle. This species seems to be rightly placed, but the difference between this genus and *Anisopogon* must be slight. The short abdomen and the thick pilosity on its dorsum will hardly allow the species to be placed under *Anisopogon*, but these are the sole differences.

ANISOPOGON.

25. **Anisopogon senilis** Bigot, Annales Soc. Ent. Fr., 1878, 423.

A female with the preceding species, from which it differs chiefly in the abdomen being nearly bare above, clothed only with short black pile,

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and is a little more elongate. My determination of the species may, however, be incorrect; the dorsum of the abdomen is not glabrous, the pile on the under side is white, not yellow, the tibiae are wholly yellow, and the length is not more than 10 mm.

26. **Anisopogon lautus** Loew, Centur. x, 34.

Two female specimens from Washington Terr. and California. Wholly black, with thick white pile below. Abdomen nearly bare above, tibiae and tarsi red, the middle legs without the tufts of black pile, and the wings pure hyaline (in one specimen slightly clouded along the veins near the base). The specimens agree very well with Loew's description, still a comparison of the males is needed.

NICOCLES.

? *Leptarthrus* Stephens, Cat. Brit. Ins., 1829.
? *Isopogon* Loew, Linnea Entom. ii, 384, 1847.
? *Aphamartania* Schiner, Verh. Zool. Bot. Ges., 1866, 671.
Pygostolus Loew, Centur, vii, 28, 1866, (Preoc.)
Nicocles Jaennicke, Neue Exot. Dipt. 47, 1867.

According to the researches of Prof. Brauer, (Ueber die Gattung Isopogon, Loew, Wien. Ent. Zeit. ii, 53) it appears that the type of Isopogon Loew (*I. brevirostris* Meig.) has terminal spurs on the front tibiae, a fact which had not only been overlooked by previous authors, but the absence was considered by both Loew and Schiner as a generic character! With the presence of this spur the genus presents strong relationship with *Nicocles*, and is by Brauer considered synonymous. This, however, to me seems somewhat doubtful. *I. brevirostris* as Schiner describes it, differs too much in the structure of the hind legs, viz: "Die Hinterschienen sind an der Wurzel schmal, werden aber plötzlich breit und plump, und verschmälern sich wieder gegen die spitze zu; die hinteren Metatarsen des Männchens sind messerartig zusammengedrückt, viel länger als die Schienen, fast fünfmal so lang als die übrigen Glieder zusammen, bei dem Weibchen von gewöhnlicher Bildung, etwas verdickt" (Faana Austr. i, 131). This peculiar structure of the male tarsi was the character upon which *Leptarthrus* of Stephens was based, the typical species of which was the same. In five species of *Nicocles* known to me, the structural characters are all uniform, the hind tibiae are thickened at the extremity (similar to *Holopogon*), the hind tarsi are much thickened, but are alike in both sexes, the metatarsi scarcely more than a fourth of the length of the hind tibiae. Moreover, in the structure of the male abdomen and in the peculiar silvery markings so constant in all the species, *Nicocles* seems to show a sufficiently important difference.

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Neither am I fully persuaded of the synonomy of *Aphamartania* Schiner, which generic name Prof. Brauer would adopt in preference to *Isopogon* or *Leptarthrus* to include the American species of *Nicocles*. This genus was described in 1866 (Die Wiedemannsche Asiliden, Verh. Zool. Bot. Ges. 1866, 671) and the typical species from Venezuela, (A. *Frauenfeldii* Sch.) the following year (ibid 1867, 372). In regard to *Dasyp. politus* Say, Schiner says (ibid 1867, 372): "Gehört in die Gattung *Aphamartania*, obwohl die Habitus, eine etwas abweichende ist." In his generic and specific descriptions of *A. Frauenfeldii* ♂ he says: "Von gedrungenem Körperbau, kurz und plump." "Hinterleib kurz und breit, etwas eingebogen." "Genitalien des Männchens dick kolbig, die klappen gegen die Bauch gerichtet." "Stark verdickten Hirterschenkel." Moreover he does not mention the peculiar silvery appearance on the last abdominal segments, which is, I think, justly entitled to generic value. In these points, the difference of which may be seen by comparison of the following description, the two genera are sufficiently separated, it seems to me, to warrant the retention of *Nicocles*, for the present at least. Wherein *Blacodes* differs from *Aphamartania*, however, I am not prepared to say. I by no means affirm that these genera are firmly established, but before settling their value a careful comparison is needed of more species. Material for this I endeavor to add by the description of two aberrant forms, both of which show differences that might be considered of generic value, but there have been altogether too many genera made in this family already.

27. **Nicocles abdominalis** n. sp. Plate I, figs. 14, 14a, 14b.

♂.—Black, moderately shining, third, fourth, fifth and sixth abdominal segments, except the narrow lateral margins, yellowish red; fifth segment about four times broader than long. Wings variegated with dark brown. Length 11–12 mm.

Head much broader than high, much flattened, the face scarcely more than one-fourth the entire width, the inner margins of the eyes nearly parallel throughout. Face flattened, but very slightly projecting in profile below, black, somewhat shining, whitish dusted below, a row of brown bristles along the oral margin, intermixed with sparse, long whitish pile, which extends upon the face nearly to the antennae. Front more opaque black; the bristles on the ocellar tubercle brown or blackish. Antennae black, the first two joints with blackish hairs; first joint a little longer than the second, the latter short; third joint nearly twice as long as the first two combined, slender, of nearly equal width throughout; style divergent, rather slender, acuminate, less than half as long as the third joint, terminating in a microscopic bristle. Occipito-orbital bristles brown, pile below soft, white, rather long and abundant. Dorsum of thorax black, with two broad, velvety opaque black stripes, narrowly separated by a slightly grayish stripe in front, confluent behind; the rather short and weak bristles above the wing, in front of, and on the scutellum, dark brown. Pleurae thickly gray pubes-

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cent. Abdomen: first two segments shining black; third and fourth bright yellowish red, very narrowly black along the lateral margins; fifth and sixth of the same color, but more broadly black on the sides, brilliant silvery when viewed from in front, less intense and finally not apparent when seen from behind. The first three segments are parallel on the sides, of nearly the same width as the thorax; from the beginning of the fourth to the tip of the fifth the sides are nearly straight, but divergent, so that at the tip the abdomen is fully a fourth wider; sixth segment convex behind. The abdomen is bare, except the sparse, very short, recumbent hairs, very much flattened, especially at the tip, the sixth segment projects eave-like much beyond the hypopygium, which is small and retracted. Legs rather slender, the tibiae and tarsi spinose, but not strongly so; hind femora slender, elongate, a little thickened just before the tip; hind tibiae elongate, slender on the basal two-thirds, much thickened, club-like at the end; hind tarsi much thickened, especially the first joint, which in length is little less than the three following together. In color the legs are deep pitchy black, on the under side of the femora, and sometimes the tibiae also deep red; bristles and pile mostly white. Wings elongate, all the posterior cells open; blackish, the third, fourth and fifth posterior cells chiefly, the anal cell wholly, the basal cells in part, the costal cell except the tip, and slender spots along the veins opposite the distal part of first vein, hyaline.

Two specimens, California (O. T. Baron).

28. **Nicoeles rufus** n. sp. Plate I, fig. 15.

♀.—Yellowish red; the second segment of abdomen with a small semioval black spot at base. Wings hyaline on basal third, on distal part variegated with brown. Length 10–11 mm.

Face dark red, slightly shining, on the sides and upper angles and on the lower part with yellow pubescence; bristles like the face, yellowish on outer part; pile short, very sparse. Antennae yellowish red, the basal joints a little darker; first joint scarcely at all longer than the second, style comparatively longer than in the preceding, nearly half as long as the third joint. Front opaque. Dorsum of thorax opaque brownish red, on each side of the middle in front a small spot, and back of the suture above the wings a larger spot of a darker, more reddish brown color; in front of the scutellum in the middle, a small, oval, shining space, on either side of which the color is golden yellow; along the suture on each side a slender, yellowish gray stripe. Pleurae thickly reddish yellow and grayish pubescent. Abdomen shining red; the second segment at the base with a narrow, transverse, semioval, shining black spot; on the anterior and posterior angles of the second segment with a small, on the posterior angles of the third and fourth with smaller silvery spots; the fifth segment on the side with a large triangle, narrowly separated from the one of the opposite side, and the sixth and seventh segments wholly opaque yellowish. In shape the abdomen has parallel sides to the tip of the second segment, thence widens to the tip of the fourth, thence on the sides more rapidly convergent. Legs wholly red, the coxae yellowish opaque, the bristles light colored. Wings a little broader than in *abdominalis*, the anterior cross-vein near middle of discal cell; on basal third (except extreme base) hyaline, beyond variegated with brown, darker across the middle, the cross-veins and along the veins at tip.

One specimen, Washington Territory.

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29. **? Nicocles scitulus** n. sp. Plate II, figs. 1, 1a.

♀.—Wings hyaline with small brown spots; abdomen shining black with a pollinose spot on the posterior angles of segments 1–5; posterior tibiae scarcely thickened at the tip. Length 5½ mm.

Black. Head and antennae black; face rather thickly whitish pubescent with sparse, obscure, yellowish pile, black on the oral margin. Third joint of antennae a little broader at its base. Front more shining, a little yellowish pollinose. Lateral orbits white pollinose; beard white. Dorsum of thorax and scutellum but little shining, rather thickly brownish pollinose, with two linear median indistinct stripes; on each in front a whitish pollinose spot, and more exteriorly in front of the wings a larger, more yellowish spot. Pleurae, coxae and sides of metanotum thickly whitish pollinose; disk of metanotum shining. Abdomen bare, smooth, shining. bluish black, in structure and markings like Nicocles; broadest at tip of fourth segment; on the posterior angles of the first segment with a small whitish pollinose spot, which becomes successively a little larger on the second, third and fourth segments, but smaller on the fifth. Legs black; thinly whitish pilose and with light colored bristles; hind legs only a little elongate, of epual thickness throughout; the tibiae not thickened at the tip, but gradually, and only moderately so, from the base; the tarsi only slightly thickened. Wings not elongate, fourth posterior cell wide open; hyaline, at distal ends of the first and second basal and discal cells, and base of the submarginal cells with small brownish clouds.

One specimen, Washington Territory (H. K. Morrison).

This species will require the male to determine its correct place. I doubt that it is a *Nicocles*. The wings are like *Taracticus*, the hind legs are shorter, stouter and not clubbed, the tarsi but slightly thickened; the abdomen is quite smooth, as in *Nicocles*. With *T. brevicornis* it forms a connection between *Taracticus*, *Blacodes* and *Nicocles*, and they both might perhaps be better placed under *Blacodes*, which then would be distinguished from *Taracticus* by the presence of a terminal style, and from *Nicocles* by the structure of the male abdomen, should this species be found not to posses the silvery markings as I suspect.

LESTOMYIA.

In his Western Diptera, page 291, Baron Osten Sacken referred a new species to the genus *Clavator* Phillipi, described from Chili, but with a doubt inasmuch as Phillipi does not mention in his description the presence of tibial spurs. The type species (*C. punctipennis* Ph.), however, has been since shown *not* to possess this spur by the able dipterologist of South America, Dr. E. Lynch Arribálzaga, who confirms the view previously taken of it by Gerstaecker (Entom. Ber. 1865, 99 and 113) and Schiner, that it is synonymous with *Hypenetes* Lw.* The present genus, hence, appears to be new, and I would propose for it the name *Lestomyia*.

*Catálogo de los Dipteros hasta ahora descritos que se encuentrenen las Republicas del Rio de la Plata. Separata, 29—1882.

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And yet, so nearly allied does the figure of Phillipi show his species to be to *sabulonum* that it seems very much of a question whether the tibial spur is a sufficient generic character, as is considered. This character, together with the closure or non-closure of the marginal cell, are excellent as aids to the artificial determination of the genera in this family, but I believe that future researches will greatly lessen their rigid application, and may throw together species with or without the tibial spurs, such as *Dioctria* and *Taracticus*, *Callinicus* and *Dasypogon*, and *Hypenetes* and *Lestomyia*.

I emend the generic characters, given at full length by Baron Osten Sacken (l. c. 292), so as to include a closely allied new species described below.

Front tibiae with a terminal curved spur. Head similar to that of *Cyrtopogon*, but smaller and narrower (narrower, also, than that of *C. punctipennis* as figured by Phillipi, l. c. pl. xxvii, fig. 29); mouth larger and more oblique; sides of face only a little diverging below, gibbose, the pile or hairs in the middle of the gibbosity, not reaching the antennae or eyes. First joint of antennae subcylindrical, short, the second yet shorter, the third longer than the first two taken together, narrow at the base and then expanded to twice or three times as wide, gently narrowed and then rounded at the tip; at the end a minute cylindrical style, ending in a microscopic bristle. Ocellar tubercle, dorsum of thorax and edge of scutellum with stout bristles. Abdomen subcylindrical, narrow, somewhat broader at the base, male hypopygium not stouter than the abdomen; female ovipositor with a star of short spines. Legs rather strong; tibiae and tarsi spinous; front and middle femora with a single spine on the hind side a short distance before the tip. Ungues and pulvilli long. Wings like those of *Cyrtopogon;* anal cell very little open, sometimes closed; anterior cross-vein about the middle of the discal cell; second submarginal cell considerably longer than the second posterior. All the posterior cells open, the fourth sometimes coarctate or nearly closed. Type *L. sabulonum* O. S.

30. **Lestomyia sabulonum.** Plate II, fig. 4.

Clavator sabulonum Osten Sacken, West. Dipt. 391.

♂ ♀.—Mouth oblique: the antennae situated midway between the ocelli and oral margin, first joint but little longer than the second, third joint narrow for a full fourth of its length, and then widened rapidly to about three times as wide as at base. Abdomen yellowish gray with whitish reflections: a black spot not reaching the posterior margin in the middle of each segment, a similar dark spot on each side of segments two, three, four and five. Legs black, femora at the tip, and base of tibiae narrowly red. Length 7–11 mm.

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Six females and four males from Kern Co., California (H. K. Morrison), I refer unhesitatingly to this species. None of them have, however, any red at base of the femora, but one from Northern California has, the base of femora and tip of tibiae red. The color of the bristles vary much, as they often do in this family. In none of my females are there any black bristles above the border of the mouth. In every female I find on the under side of the second joint of the antennae two black bristles which are less strong, and white in the male. There are eight strong bristles on the females' ocellar tubercle, in five specimens wholly black, in two partly whitish; in all the males they are less strong and whitish. In all my specimens, both male and female, the fan-shape fringe of hairs in front of the halteres is white. In four of the specimens there are six bristles on the edge of the scutellum; in three there are eight, in two ten, so that the number is not of specific value. The spines on the tibiae of the male are white, in the female mostly whitish, but in part black. My specimens are all larger (9–11 mm.) than the ones described by Baron Osten Sacken, (7–7½ mm,) nevertheless I believe the species is the same.

31. **Lestomyia fraudiger** n. sp. Plate II, fig. 5.

♂.—Head below only gently oblique; face distinctly longer than the front from ocellar tubercle to antennae, less gibbose on the lower part; third joint of antennae elongate, less distinctly clavate, gradually widened from near the base, not three times as wide on its widest portion. Abdomen uniformly covered with whitish gray pubescence, leaving a row of small lateral black spots on segments 3–6. Legs red with broad black rings on femora and tibiae. Length 10 mm.

Gray. Face and front whitish, the mystax, pile on the inner sides of the front near the eyes and the bristles of the ocellar tubercle all nearly white, a single black bristle on the second joint of the antennae. Antennae black, the first joint somewhat yellowish at the base, the third joint begins to widen from very near its base, the under surface is nearly straight, the upper side gently convex, except near the base, the tip obtuse. Beard long and abundant, occipito-orbital bristles chiefly yellowish. Dorsum of thorax yellowish gray with four brownish stripes, the middle ones narrowly separated, the lateral ones consisting of two oval spots, the one before, the other behind the suture; there are four rows of rather stout black bristles nearly equidistant from each other, the lateral ones more irregular. Scutellum in the single specimen with four black bristles. Pleurae wholly purely grayish, the fan-like row of hairs in front of the halteres yellowish white. Abdomen wholly, and nearly uniformly whitish gray; on each side of the third, fourth, fifth and sixth segments near the front a small circular shining black spot; pile of the hypopygium yellowish white. Coxae and legs red; front femora with a small ring, middle with a broader, and hind pair except the base and tip, tibiae except the broad base tip of hind pair broadly, and middle pair narrowly black; spines of the legs white, of the tarsi chiefly black. Wings as in *sabulonum*, hyaline.

One specimen, Mendocino Co., California (O. T. Baron).

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TARACTICUS.

Loew. Centur. vol. ii, 240, 1872.

The spurs in this genus are very small, and were evidently overlooked by Schiner when he placed the typical species under *Dioctria*. It does not seem to me probable that *Ceraturgus niger* Macquart can belong here.

32. **Taracticus octopunctatus.** Plate II, figs. 2, 2a.

Dioctria 8-punctata Say, J. Acad. Phil. iii, 49; Compl. Wr. ii, 63; Wiedemann Auss. Zw. Ins. 1, 365; Schiner, Verh. Zool. Bot. Ges. 1866, 675; ibid 1867, 369.

Taracticus octopunctatus Loew, Centur. vol. ii, 240; O. Sacken Cat. Dipt. 2 Ed. 72.

♀.—Face considerably longer than wide; antennae distinctly longer than the hight of the head, first joint about once and a half the length of the second, third joint more than twice the length of the first two together, slender, obtuse, the style hardly distinguishably differentiated, on the upper surface a small bristle a little beyond the middle. Dorsum of thorax with three yellowish lines, the middle one straight. Abdomen shining black, with a small silvery spot on the posterior angles of the second, third, fourth and fifth segments. Legs red, tip of hind tibiae broadly and of middle tibiae narrowly, and tips of all the tarsal joints blackish. Length 8 mm.

33. **Taracticus brevicornis** n. sp. Plate II, fig. 3.

♂ ♀.—Antennae short, about as long as the distance from antennae to oral margin; style distinct, acute, terminating in a microscopic bristle; legs brownish red, blackish toward the tips of tarsi; abdomen shining black, with a white spot on the posterior angles of the second, third, fourth and fifth segments. Length 7-9 mm.

Front and face silvery white, the bristles on the oral margin, ocelli, and the finer ones along the lateral margins of the front, black. Face broader than in *octopunctatus*, being very nearly square, the distance from antennae to oral margin scarcely greater than that between the eyes. Antennae black, the first two joints with black bristles below; short, not as long as the hight of the head, first joint a little longer than the second, third joint slender, not more than twice the length of the first two taken together; style rather slender, not as long as the second antennal joint, terminating in a microscopic bristle. Dorsum of thorax thickly covered with brownish ochraceous pollen, with two very indistinct darker, brownish median stripes in front. Pleurae gray pollinose. Abdomen of equal width, gently convex above, black, shining, lightly punctulate, the posterior angles of the second, third, fourth and fifth segments with a small quadrate silvery spot, the narrow anterior margins of the same segments less distinctly whitish silvery. Legs brownish red, all the tarsi reddish brown, blackish at the tips. Wings like those of *T. octopunctatus*, nearly pure hyaline.

Two specimens, Washington Territory.

This species is, I believe, a *Taracticus*, although it has some of the characters of *Blacodes*. In size and appearance it is strikingly like *T. octopunctatus*, and with the exception of the head, the structure is almost precisely the same, and the coloration nearly so. The head and antennae, however, appear to be those of *Blacodes* or *Nicodes*. The small cross-

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veins of the wing in one specimen is nearer the end of the discal cell, as it is in *Blacodes;* unfortunately in the other specimen it is near the middle, as in *T. octopunctatus.* The only characters that I can understand for *Blacodes* now, are: Abdomen smooth, not clavate, thorax a little more gibbose, third joint of antennae perhaps more fusiform, fourth posterior cell of the wings nearly closed, and the wings with dark markings.

SAROPOGON.

34. Saropogon combustus.

S. combustus Loew, Berl. Ent. Zeit. 1874, 373.

"♂.—Black, the feet and wings of the same color; head and dorsum of thorax thickly dilutely luteous pollinose, pleurae fuscous pollinose; mystax whitish, front and dorsum of the thorax with pallid yellowish pile, remainder of the body black pilose, except on the tibiae chiefly, and on the tarsi wholly pallidly pilose. Length 13½ mm. Texas."

Three specimens from Western Kansas agree throughout with Dr. Loew's description; the tip of the second joint of the antennae is distinctly yellowish; in two specimens the fourth posterior cell is closed a little distance before the border of the wing.

35. Saropogon adustus.

S. adustus Loew l. c. 375. "♀.—Black, head and thorax very thickly luteo-pollinose, the posterior part of each abdominal segment broadly red, the first five on the posterior angles with thick dilutely lutescent pollen; antennae and feet red, the femora near the tip black; wings hyaline, the tip broadly blackish. Texas."

Two female and one male specimens from Western Kansas (E. W. Guild) are undoubtedly this, but the species is evidently variable in coloration. In all my specimens the legs are wholly reddish yellow, and the antennae of one specimen lacks the black at the tip of the third joint. In two specimens the ground color of the thorax is chiefly black, yellowish only on the front, sides and posterior part, in the third, a female, the ground color is wholly light yellowish red, with the rather narrow and abbreviated stripes of the thorax and a small spot above the middle coxae black. In all the abdomen is red, with a large triangular spot on the lateral anterior parts of the third, fourth and fifth segments, scarcely touching each other on the anterior border, a smaller one more broken up into spots on the second segment, and a very small one on the anterior angle of the sixth, black.

DEROMYIA.

Phillipi, Aufzählung der Chilenischen Diptera, Verh. Zool. Bot. Ges. xv, 705, 1865; v. d. Wulp, Tijds. voor Entom. xxv. Amerikaansche Diptera, 3, 92.

Diogmites Loew, Centur.

This genus, as Baron Osten Sacken first pointed out, is very closely allied to our species hitherto placed under *Diogmites.* A study of Phil-

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lipi's figures and descriptions convinces me that v. d. Wulp is right in rejecting *Diogmites*. In Loew's very brief diagnosis of the genus he defined it as differing from *Saropogon* in the fourth posterior cell being closed, the head broader and more disciform, the abdomen and feet longer and more slender. He afterwards (Ber. Ent. Zeit. 1874, 376) emended it as follows: "Mit *Diogmites* kann die Gattung *Saropogon* nicht verwechselt werden, da der Körperbau der *Diogmites* ein weniger gedrungener, namentlich der Hinterleib länger und schlanker ist, auch die vierte Hinterrandzelle vor, und zwar bei den nordamerikanischen Arten verhältnissmässig weit vor dem Flügelrande geschlossen, nicht wie bei den *Saropogon*-Arten geöffnet oder höchstens am Flügelrande selbst geschlossen ist, so dass in Folge davon die dritte Hinterrandszelle ein viel grössere Breite als bei den *Saropogon*-Arten hat; es ist dies für die *Diogmites*-Arten sehr characteristisches Merkmal, durch welches sich auch die südamerikanischen *Diogmites*-Arten aus dem Verwandtschaftskreise des *Diogmites* Wied. auszeichnen, bei denen die vierte Hinterrandszelle in geringerer Entfernung vom Flügelgerande geschlossen ist, als bei den mir bekannten nordamerikanischen"

This difference, however, is sometimes very slight indeed; in some specimens of species of *Saropogon* and *Diogmites*, described by Loew himself, it is absolutely null. The characters then, at present, are the more elongate form, the more slender abdomen and legs, and the fourth posterior cell being always closed and usually long petiolate. *Deromyia gracilis* Ph. (Tab. xxvi, fig. 29), is in structure and markings much like *D. misellus* Lw.; in his discription Phillipi speaks of the fourth posterior cell as being closed; in some specimens of *misellus* the cell is closed only just before the border of the wing.

36. **Deromyia rufescens** (Macq.) v. d. Wulp, Tijdschr. v. Ent. xxv, 91.
Dasypogon rufescens Macq. Hist. Nat. Dipt. i, 295, 8.
Diogmites rufescens v. d. Wulp, Notes from the Leyden Mus. iv, 76, 5.

I do not know this species; Prof. v. d. Wulp thinks it different from *D. discolor*. Macquart recorded it from Philadelphia, but his specimens may have come from the South-west. v. d. Wulp received it from Arizona.

37. **Deromyia Winthemi.** (Plate II, fig. 6.)
Dasypogon Winthemi Wiedmann, Dipt. Exot. 1, 223, 17; Auss. Zwei. Ins. i, 387, 32.—(South America.)
? —— *angustiventris* Macquart, Dipt. Exot. 1 Suppl. 65; Tab. vi, fig. 9. (Without locality.)
Diogmites misellus Loew, Centur. vii, 39.
Deromyia Winthemi v. d. Wulp, Tijds. v. Ent. xxv, 93.

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This species agrees with Wiedemann's description very well, but the synonomy rests upon more direct evidence. Specimens in Prof. v. d. Wulp's collection without locality were compared by Prof. Mik with the typical specimens in the Vienna Museum, and specimens that I communicated to v. d. Wulp, he writes me are *D. Winthemi* Wied. I have specimens from Indiana and Kansas that show no difference from a number of individuals that I captured in an open field in June near New Haven.

38. **Deromyia discolor.**

Diogmites discolor Loew, Centur. vii, 37.—Penna.

A single, somewhat rubbed specimen from Pennsylvania (S. Auxer) agrees with Loew's description.

39. **Deromyia umbrina.**

Diogmites umbrinus Loew, Centur. vii, 43.
Dasypogon basalis Walker, Dipt. Saund. 95.
—— —— *Herennius* Walker, List, etc., ii, 339.

This species is recorded from N. Y., Mass., and Ill. by Osten Sacken. I have taken numerous specimens in Connecticut and have it from Vermont. The abdomen is nearly like that of *Saropogon*.

40. **Deromyia angustipennis.**

Diogmites angustipennis Loew, Centur. vii, 41. Kansas, Mexico.

A single specimen from Kansas has the legs lighter and the dorsal thoracic stripes darker than Loew describes, yet it is evidently this species.

41. **Deromyia ternata.**

Diogmites ternatus Loew, Centur. vii, 38.—Cuba, Florida.

A single specimen from Georgia is probably this, but from the variability of the species, I am in doubt.

Species incertae sedis.

42. **Laparus ? pictitarsis** Bigot, Annales des Soc. Ent. de France 1878, p. 417.

If my determination is correct this is not a *Laparus* nor does it even belong in this division of the *Dasypogoninae*. My specimen agrees throughout with Bigot's description, except that the femora are black; the "eperon *a peu pres droit* et noir," in my specimen is only a stout black spine! I cannot at present place this species. The head and wings are like *Callinicus*, but the abdomen is shorter, of equal width and cylindrical, and very different in general appearance.

DASYLLIS.

43. **Dasyllis flavicollis** Say, Longs Exped. App. 374, 2; Compl. Wr. 1, 255. (*Laphria.*)

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Three specimens from Connecticut agree perfectly with Say's description. Its small size, yellow pile of head, thorax and scutellum; the rather broad third joint of the antennae, and very short second joint will enable it to be distinguished without difficulty. Length 11–15 mm.

44. **Dasyllis tergissa** Say, J. Acad. Phil. iii, 74, 5; Compl. Wr. ii, 67. (*Laphria.*)—Head, thorax, a broad band on 2–4 abdominal segments, anterior coxae and tibiae yellow pilose. Length 18–25 mm.

Four specimens from Connecticut are typical. Another has but very little yellow pile on the legs and abdomen; two more very large specimens have the abdomen wholly black, and but a few yellow hairs on the legs.

45. **Dasyllis thoracica** Fab.; Wied., Auss. Zw. i, 511, 21 (*Laphria*).—Head, scutellum, abdomen and legs black pilose; thorax yellow pilose. Length 18–20 mm.

Eight specimens, Connecticut, Penna.

46. **Dasyllis unicolor** n. sp.—♂.—Black shining, everywhere yellow pilose, rather more fulvous on the thorax. Wings tinged with brown, hyaline on basal portion. Length 19 mm.

One specimen, Washington Territory.

There is but little to add to this diagnosis. I do not perceive a black hair or bristle anywhere. In size and shape it does not differ from specimens of *astur*.

47. **Dasyllis sacrator** Walker, List, etc., ii, 382.

Thorax, basal portion of the abdomen, and legs in large part, yellow pilose. It will be confounded with *tergissa* only. It is smaller; the beard wholly, the hair on the face wholly or in large part black. The wings are not usually as dark colored. The species varies considerably. I have ten specimens taken near the base of Mt. Washington (July 25–30). The color of the hair in some is fulvous, in others light yellow, that on the face in some specimens is largely intermixed with yellow. In most of the specimens there is considerable yellow hair on the hind legs, but in others it is wanting. The light colored hair of the abdomen is usually confined to the second and third segments, in some it extends into the fourth and fifth, and in others it is confined to a small spot on the side of the second segment, or may be wholly wanting. Such specimens may not be easily distinguished from *thoracica*; in all my specimens of the latter the body is more robust, the black abdominal pile is longer and more abundant, and the hair of the legs has rarely any intermixture of yellow.

48. **Dasyllis posticata** Say, Long's Exped. App. 374, 1; Compl. Wr. i, 255 (*Laphria*).—Head, thorax, and before the tip of abdomen yellow pilose.

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I have but a single eastern specimen of this species, in which the tibiae have no yellow pile.

49. **Dasyllis astur** O. Sacken, West. Dipt. 285.

I have twenty specimens from California, Washington Territory and Oregon. They vary much and the species is doubtfully distinct from the foregoing: four specimens have the legs wholly black pilose, and with exception of the pile of the front being in part or wholly yellow, are typical *posticatae* in appearance. All the rest have, however, more or less yellow pile on the front legs and coxae, and sometimes a lesser quantity on the middle tibiae. The yellow pile near the tip of the abdomen varies in extent; it usually extends over three segments; in some, however, only on one. As Baron Osten Sacken remarks, I find the pile of the head and pleurae variable. Two male and female specimens from Western Kansas have the four front legs thickly yellow pilose, and the yellow on the abdomen extending on the sides quite to the base.

50. **Dasyllis columbica** Walker, Osten Sacken, West. Dipt. 285.

Eight specimens from Oregon and Washington Territory I recognize as this. The species is more slender, and less thickly pilose than the preceding, especially on the thorax where the pile is shorter. Across the dorsum it is more or less black; on the posterior part longer, thicker and sometimes orange colored, or reddish. The hind tibiae as well as the front and middle pairs have yellow pile.

HYPERECHIA.

Schiner, Verh. Zool. Bot. Ges. 16, 673 (1866).

A single specimen from Pennsylvania, that has been in my collection for several years, I have not been able to identify with any described species. In size and appearance it resembles *Dasyllis tergissa*, but offers very distinct generic differences. From a study of Schiner's definition of *Hyperechia*, and also of the type species, *Laphria xylocopiformis* Walk., it seems probable that it belongs to that genus, and yet it may have differferences that Schiner does not mention; I therefore give its structural characters:

Very large, robust, black; densely pilose. Head broader than in *Dasyllis*, considerably broader than high. The inner borders of the eyes nearly parallel. Face gibbose below, but even, convex from the antennae to the mouth, the convexity being greater below, densely covered with long hair. Antennae short, slender, not as long as the face, second joint only a little shorter than the first, cylindrical and more slender; third joint slender, a little broader at the base, scarcely longer than the first two together, terminating in a small but very distinct

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cylindrical style, at the tip of which there is a minute bristle. Proboscis short, thick, obtuse; palpi strongly clubbed, densely hairy. Thorax large, broad, only gently convex above, thickly pilose, as in *Dasyllis* Abdomen short, not twice the length of the thorax, very broad, depressed, gently convex above, broadest at the base, the sides thence gently convergent to the tip of seventh segment, which is very broad, the abdomen thus appearing nearly truncate. Legs short, stout, the front and especially the middle femora thickened, the hind pair only a little elongated, less thickened, cylindrical, of nearly equal thickness throughout (a very little thicker on the proximal half), not clubbed as in *Dasyllis*; hind tibiae thickened and arcuate. Pulvilli small, narrow. Anterior cross-vein of wings a little before the base of the fourth posterior cell and very near the base of the discal cell; the first posterior cell hence very long, very narrow and closed a little before the tip. Anterior branch of the third vein strongly curved forward, so as to meet the costa only a little beyond the tip of the first vein. Fourth posterior cell closed a little before the border; anal cell acute, closed a considerable distance before the border.

The type of *Hyperechia* is *Laphria xylocopiformis* Walker, (List, etc., ii, 385) from British India, and so far as I am aware but two other species are known, viz: *H. (Laphria) robusta* (Wied.) v. d. Wulp, whose habitat is unknown, and *H. fera* v. d. Wulp, from Borneo.

51. **Hyperechia atrox** n. sp. (Plate II, figs. 7, 7a, 7b.)

♀.—Very large, robust, black, densely clothed with black and yellow hair. Hair of the face long, dense, brownish black; on the first two joints of the antennae in large part yellow. Hair of the front chiefly yellow, intermixed with black; the hair of the occiput dense, but not very long, together with that of the palpi deep black. Dorsum of thorax with thick, light yellow pile, longer and more abundant on the posterior part and on the scutellum. Pile of pleurae black; in front of the halteres a very conspicuous and dense tuft of long yellow pile. Abdomen thickly clothed with erect, rather short black pile; longer, bushy, and yellow on the sides of the second segment just behind the halteres. Legs with black pile; on the front, hind, and more especially the middle coxae, the middle femora behind and the hind femora in front, longer and yellow. Tibiae and tarsi reddish black. Wings nearly hyaline, with a strong yellowish tinge in front. Length 22 mm.; of wing 18 mm. Width of abdomen at second segment 8 mm.; at tip 5½ mm.

One specimen, Penna., (S. Auxer).

LAPHRIA.

52. **Laphria gilva.**

Asilus gilvus Linné, Fauna Suec. 1912.

—— *rufus* de Geer, Ins. vi, 241, 4; pl. 13, f. 15.

Laphria gilva Loew, Linn. Ent. ii, 548, 8; Schiner Fauna Austr. 1, 139; Perris, Annales Soc. Ent. France (4), 212, pl. 3, fig. 89, 96 (Parasitic on *Spondylis* and *Criocephalus* larvae): v. d. Wulp, Amerikaansche Diptera, Tijds. voor Entom. xxv, 104.

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"Een ♀ uit de omstreken van Quebec, in het Brusselsche museum aanwezig, gelijkt zoo volkomen op deze Europesche soort, dat ik het gerust als zoodanig durf determineren" (v. d. Wulp, l. c.). I have before me a specimen from Canada (J. B. Caulfield) that agrees very well with the description of Schiner's.

53. **Laphria vultur** Osten Sacken, West. Dipt. 286.

Ten specimens from Washington Territory, Oregon and California I identify with this, but, in all my specimens, the dorsum of the thorax across the middle is clothed with short black pile.

54. **Laphria anthrax** n. sp.

♀.—Black; head, thorax, legs, and first two segments of the abdomen wholly black pilose; remainder of the abdomen, except the extreme tip, densely clothed with close-lying bright yellowish-red pile. Wings blackish. Length 21 mm.

The pile of the face is abundant, on the lower part composed mostly of bristles. Dorsum of thorax shining, wholly covered with short black pile, except the short black bristles above the wing. The third--seventh segments of the abdomen are wholly concealed beneath bright orange-red pile; the pile lies very closely and thickly. Tip of abdomen and venter black pilose. Legs wholly black pilose. Wings dark brownish or blackish; the anal and second basal cells in large part hyaline; the middle of the fourth and fifth posterior cells lighter.

One specimen, Northern California (O. T. Baron).

This species must resemble *L. rapax* O. S., and it is possible it may be the other sex, but the *entire* lack of white pile renders such a view improbable.

55. **Laphria ferox** n. sp.

♀.—Black; facial gibbosity, thorax except the posterior part of the dorsum, tip of abdomen and legs, black pilose; face on the side above, beard, and posterior part of dorsum with reddish yellow pile. Length 18-20 mm.

First joint of antennae rather short, thick, the second distinctly more than half as long, both clothed with black hairs. Facial gibbosity thickly covered with long black bristles and finer black hairs, separated by a distinct interval from another tuft of black hairs just below the antennae; on each side of the face above with short, close-lying, bright yellow pile. Pile of the occiput below yellow, above partly black. Dorsum of thorax nearly opaque brownish black; on the inner side of the humeri a large yellowish grayish pollinose spot; pile of dorsum erect, not very abundant nor long, black, a little lighter colored in front; on the posterior part and on the scutellum longer, yellow. Pleurae thickly grayish pollinose, pile sparse; the long, fan-like row in front of the halteres, black; abdomen shining black, rather thickly clothed with reddish pile, thicker on the posterior and middle parts of the segments, a large spot on the sides in front, more shining, sometimes with short obscure pile. The outline of the pile on each segment is more apparent when viewed directly from above; when seen from behind more changeable, and the ground color everywhere visible. Front and middle coxae with yellow pile; legs wholly black pilose; the front tibiae and tarsi on the inner side thickly yellow pubescent; hind tarsi somewhat reddish. Wings brownish on the outer part, hyaline toward the base.

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Two specimens, Washington Territory (H. K. Morrison).

One of the specimens has on the inner side of the front femora some whitish pile.

56. **Laphria vivax** n. sp.

♂.—Black, shining; pile of the face, front, beard, humeri, scutellum, pleurae, posterior angles of the abdominal segments, coxae, front and middle tibiae light yellow. Length 22 mm.

Face thickly clothed with light yellow pile, on the lower angles black; protruding through the yellow pile a number of black bristles. The first two joints of the antennae with black pile; the second joint scarcely half as long as the first. Beard and pile of the proboscis light yellow; on the upper part of the occiput, and the bristles of the ocelli, black. Dorsum of thorax with a distinct blue reflection, clothed with short black pile, longer behind; in the front, the post alar callosities and a thin row in front of the scutellum light yellow. Scutellum with yellow pile and yellow and black bristles along its border. Pleurae with a tuft of yellow pile in front of the root of the wings; the fan-like row of hairs in front of the halteres light yellow. Abdomen shining black, with very short black pile, and longer dense light yellow pile as follows: the posterior angles of the third segment and on the following segments, successively extending more inward along the hind margin; on the seventh it forms a complete cross-band in front of the hypopygium; on the sides of the second segment in front, reaching nearly across, and succeessively less on the following segments, with less dense. more erect yellow pile; pile of the hypopygium black. Legs black pilose; the front and middle tibiae on their outer side with yellow pile, a trace of which is found on the hind tibiae. Wings nearly hyaline toward the base, lightly clouded with brownish on outer part.

One specimen, Washington Territory, (H. K. Morrison).

57. **Laphria bilineata** Walker, List. etc., ii.

♂ ♀.—Black; black pilose; posterior occiput below, pleurae, legs and sides of abdomen with long silky white pile; dorsum of thorax but little shining, in front with three darker opaque stripes, the middle one more or less obsolete; 3–7 segments of abdomen, except the sides, yellowish-red, with similar colored pile; facial gibbosity large. Length 15–20 mm.

Facial gibbosity large, globose; pile and bristles of the head wholly black, except on the occiput below, where it is long, abundant and silky white. Dorsum of thorax nearly opaque, with two rather distinct, narrow, median, more opaque brown stripes; obsolete posteriorly, between them there is a third, more obsolete, but of which the anterior end is usually quite apparent. Pile of dorsum rather short, erect, not abundant, black. Pleurae grayish pollinose, with sparse, silky white pile; the fan-like row of hairs in front of the halteres, black. Abdomen black, moderately shining; a very large oval spot reaching from near the beginning of the third segment to the tip or hypopygium, and broadly separated from the lateral margins, yellowish-red, with appressed, similar colored pile. On the black portion the pile is black, short; on the sides in front long, silky white. Legs black; the femora in large part, and more or less of the tibiae with silky white pile. Wings brownish along the veins; the inner parts of the cells and the base of the wings more hyaline.

Ten specimens, N. California (O. T. Baron).

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58. **Laphria franciscana** Big. Ann. Soc. Ent. Fr. 1878, 225.

♂ ♀.—Deep black, shining; face with black bristly hairs and yellowish white or white pile; dorsum of thorax pubescent, blue; in the male with short light yellow, in the female wholly black, pile. Length 12–13 mm.

♂.—Bristly hairs on the face black, in the middle of which there is some long light colored pile, and on the sides above concealed beneath more appressed yellowish white or white pile; in the middle above, bare; front pollinose. The tuft of hairs below the base of the antennae and on the first two joints black. Third joint of antennae not much longer than the first two together. Front with black hair, and black bristles on the ocellar tubercle; occipito-orbital hair black; pile of beard soft, white. Dorsum of thorax of a distinct opalescent bluish color, the short, not abundant pile, light yellow, on the posterior part longer, black, the bristles also black; a spot lightly pollinose on the inner margins of the humeri. Pleurae black, lightly whitish pollinose; the ante-halteres bristles black. Abdomen deep shining bluish black, with very short black pile; on the sides of the segments, in front and behind, longer, light yellow, but still not conspicuous; the bristles and hairs on the sides of second segment black, the hair sometimes whitish. Legs deep black; front and middle coxae, and the underside of the four front femora near the base, with longer whitish pile; on the four front tibiae with shorter, light yellow pile. Wings hyaline at the base, tinged with blackish beyond.

♀.—The pile among the bristles on the facial gibbosity is wholly black, as is also that on the dorsum of the thorax; the posterior angles of the third, fourth and fifth abdominal segments have but little whitish pile; otherwise as in male.

Three males and one female from Washington Territory (H. K. Morrison), and two females from N. California (O. T. Baron).

59. **Laphria canis** n. sp.

♂ ♀.—Deep shining black; face with black bristly hairs and white pile; dorsum of thorax in both sexes with very short, sparse whitish pile, and in the male with longer, more sparse black pile, also. Length 10–11 mm.

Is closely allied to the preceding; the white pile on the facial gibbosity is less in the male in quantity, and the dorsum of the thorax lacks the characteristic yellow pile of the male, and the black pile in the female. In both sexes the dorsum is clothed with very short white pile or, more properly, pubescence, a little longer and more erect in the male; in the latter also there is moderately long, sparse, black pile, wanting in the female. In the male the dorsum of the thorax is bluish opalescent, but in the female the blue is scarcely apparent. The pile of the abdomen is longer, and on the sides near the base thicker and white. On the tibiae also the white pile is longer and more conspicuous.

Two specimens, Conn., June 25.

60. **Laphria xanthippe** n. sp.

♂ ♀.—Black, shining, black pilose; third segment in part, remainder of the abdomen, and under sides of hind femora red. Length 12–15 mm.

Face black, in large part shining, on the sides near the eyes narrowly white pollinose with a little silvery pile near the mystax below, elsewhere the pile and bristles are wholly black. Third joint of antennae rather more than twice as long

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as the first two together. Dorsum of thorax nearly bare, with *very* short black pile. Pleurae wholly bare, shining; the coxae lightly pollinose. Abdomen with very short black pile, the bristly hairs on the side of second segment not abundant; first two segments black, with a bluish reflection; the large part of the third and the remainder of the abdomen red, except on the sides the black extends on the fourth, sometimes narrowly on the fifth. Legs black, with black pile; the hind femora for the whole length, except the upper side, red; on the inner side of the front tibiae and all the tarsi with golden pubescence. Wings brownish, hyaline toward the base.

One male and two females, Mt. Hood, Oregon (H. K. Morrison).

61. **Laphria pubescens** n. sp.

♂ ♀.—Black, shining; legs, except the tarsi, red. Length 10–13 mm.

Face and front clad with black pile and hair, except a tuft of silver pile on each side of the face above the mystax. In the male the beard wholly white, in the females wholly or chiefly black. Dorsum of thorax and abdomen shining, faintly bluish black, clothed with golden pubescence, very noticeable when seen from in front. Pleurae bare, shining black; the coxae whitish pollinose. Front and middle coxae, and under sides of the femora with white pile; femora and tibiae wholly red, bristles black; tarsi black with golden pubescence on the the under side. Wings tinged with brown, less so toward the base.

Eight males and five females, Washington Territory and Mt. Hood, Oregon, (H. K. Morrison).

LAMPRIA.

62. **Lampria felis** Osten Sacken, West. Dipt. 286.

A single female from Washington Territory agrees perfectly with Osten Sacken's description; it lacks the tubercles of *Lampria*, but has the setae of the hind femora very distinct.

63. **Lampria bicolor** Wiedemann, Auss. Zwei. Ins. i, 522, 40 (*Laphria*).
? Laphria saniosa Say, J. Acad. vi, 158; Compl. Wr. ii, 355.
Laphria megacera Macquart, Hist. Nat. Dipt. i, 284; 18 (type compared by Osten Sacken).
Laphria antaea Walker, List, etc., ii, 379 and vii, 527.

I have three specimens from Connecticut in which the first segment of the abdomen above is black; the dorsum of the thorax has fine golden pubescence,—they are evidently *saniosa* Say. Another specimen (♀) from Pennsylvania has the abdomen red from the very base, and the thorax without the golden pubescence. It may be a distinct species; if so it must be the true *bicolor* of Wiedemann, as he certainly would have noticed the black on the abdomen had it existed.

64. **Lampria rubriventris** Macquart, Hist. Nat. Dipt. 1, 284, 19 (*Laphria*).

Four specimens from Georgia show a considerable variation in the abdomen. In one (♂) it is wholly red above, except the base; in the females it is chiefly black, with the red on the sides near the front, not

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extending quite across on the third segment. The shorter antennae, white mystax, and golden pubescence of the thorax will enable it to be readily recognized.

65. **Pogonosoma dorsata** Say, Amer. Ent. i, tab. vi; Compl. Wr. i; Wied. Auss. Zw. i, 505, 12 (*Laphria*).

Three specimens from Washington Territory agree throughout with the descriptions. I have no specimen for comparison.

66. **Andrenosoma fulvicauda** Say, J. Acad. Phil. iii, 53; tab. vi; Compl. Wr. i, 12 (*Laphria*), Wied. Auss. Zwei. Ins. i, 517, 31, (*L. pyrrhacra*).

A single specimen from Northern California agrees perfectly with Say's description, and I believe it to be the same.

In addition to the species enumerated in the foregoing pages the following new species have been described, since the publication of Osten Sacken's Catalogue, by J. Bigot in the Annales Soc. Entom. France, 1878.

From the United States:

Dasypogon bilineatum (*Callinicus calcaneum* Lw.) l. c. 411.
D. quadrinotatum l. c. 412.—California.
Seilopogon (*Cheilopogon*) **rubiginosum,** l. c. 419, N. America.—"Detritum et mutilatum, * * partie anterieur de la tête, extrémite de l'abdomen et pieds antérieurs, manquent."

The fragment left might belong to several genera.

Stenopogon albibasis, l. c. 422.—California.
Anisopogon vespoides, l. c. 433.—California.
Holopogon nitidiventris, l. c. 437.—California.
Leptogaster scapularis, l. c. 444.—California.
Laphria corallogaster, l. c. 227.—N. Am., (*Lamprin*?)

From Mexico:

Microstylum fulvigaster, l. c. 410.
Stenopogon fuscolimbatum, l. c. 421.
Ceraturgus geniculatus, l. c. 443. (Antennae wanting.)
Cormansis eupoda, l. c. 234.
Aphestia nigra, l. c. 235.
Atomosia soror, l. c. 236.
Cerotainia nigra and **dubia,** l. c. 238.
Pogonosoma arachnoides, l. c. 239.

NAUSIGASTER n. gen,

Moderately large species, black in ground color but thickly pollinose, with shining, numerous, small, black, punctulate spots. Head spheroidal, broader than the thorax. Eyes bare. Front narrowed above, evenly arched to the antennae, which are situated a little above the middle of the head in profile. Face narrowed below, concave on upper part below the antennae, the tubercle near the middle large, obtuse, below it much

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receding to the oral margin, resembling in structure the species of *Paragus*, but more concave above the tubercle and more receding below it; the tubercle being higher up. Cheeks narrow. First and second joints of the antennae extremely short, so that the third joint appears sessile, the latter large, subquadrate, as broad as long, the angles rounded, and narrower on the basal portion; arista small, bare, very short, not as long as the third antennal joint, remote from the base, situated upon the anterior rounded angle near the end of joint. Scutellum small, convex, but thinned along its margin. Abdomen very convex above, beyond the middle being in cross-section two-thirds of a circle; first segment short; second segment moderately long; third segment much shorter than the second, in the middle on the sides nearly as long, the incisure in front forming a deep stricture, less evident behind; fourth segment very large, as long as the three preceding together, forming half of an ellipsoid, flattened on one side, the strongly convex end extending beyond the anal opening, and wholly concealing the following segments. The sides of the abdomen are directed downward and inward inclosing toward the outer part of the venter a deep cavity, shallower on the second and third segments; at the posterior part of this cavity, and concealed by the posterior rim, is the anal opening looking obliquely forward; back of the anus on the rim on each side is a small obtuse membranous flap or process. Legs as in *Paragus*—rather short and moderately strong, the posterior metatarsi thickened. Wings more like those of *Syritta* than of *Paragus*. The first longitudinal vein joins the costa a little before the tip of second vein, and then by a curve at the tip, so that the vein runs parallel to the costa for some distance. The anterior cross-vein is near the basal third of discal cell, and the third vein beyond is gently bisinuate. The last section of the fourth vein is sinuate like it is in *Syritta*, but more deeply so, the vein terminating very near the costa, but forming nearly a right angle at its juncture.

The present genus must be placed in the vicinity of *Paragus*; but yet it is very different in the antennae, the abdomen and the wings. The fourth segment of the abdomen is probably composed of two, as is the third segment in *Triglyphus;* it does not show any traces whatever of such union on the dorsum, but I think I can distinguish it in the venter.

Nausigaster punctulata n. sp.

♀.—Length 12 mm. Black, moderately shining, everywhere except on legs and venter covered with thick whitish pile, which, when not rubbed, leaves every numerous, nearly contiguous circular black spots, more abundant on the thorax; on the dorsum of thorax and abdomen the ground color of the moderately shining punctulate black surface may be in large part denuded. In the middle of the

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thoracic dorsum is a pair of indistinct, less pollinose stripes. Antennae wholly yellowish red; the cheeks and the lower part of the face obscurely yellowish, in the middle of the face below the antennae there is an oval space which is evenly pollinose, free from the black dots. Wings hyaline, with two conspicuous blackish spots; the larger one beginning in the subcostal cell at tip of auxiliary vein, thence more broadly along the marginal cell, the base of the submarginal cell for a third of its length, and less distinctly opposite this on the cross-vein and base of first posterior cell; the smaller spot reaching from the tip of the first longitudinal vein nearly to the third; veins black, brown toward the base. Legs yellowish red; the front femora on basal half, and the other femora except the tips black; the front and hind tarsi brown.

One specimen, New Mexico.

EXPLANATION OF PLATE I.

Fig. 1, 1a.—*Myelaphus melas* Big.
Fig. 2.—*Ceraturgus cruciatus* Say.
Fig. 3.—*Dioctria nitida* n. sp. (antenna.)
Fig. 4.—*Dicolonus simplex* Lw.
Fig. 5, 5a.—*Ospriocerus Aeacus* Wied.
Fig. 6, 6a.—*Triclis tagax* n. sp.
Fig. 7.—*Microstylum galactodes* Lw.
Fig. 8.—*Habropogon bilineatus* n. sp.
Fig. 9.—? *Cyrtopogon* (? *Holopogon*) *gibber* n. sp.
Fig. 10.—*Cyrtopogon* n. sp.
Fig. 11.—*Cyrtopogon* n. sp.
Fig. 12.—*Callinicus calcaneum* Lw.
Fig. 13.—*Nicocles politus* Say. (Abdomen of male.)
Fig. 14, 14a, 14b.—*Nicocles abdominalis* n. sp., (wing, abdomen of male, and hind leg).
Fig. 15.—*Nicocles rufus* n. sp.
Fig. 16.—*Nicocles dives* Lw.

EXPLANATION OF PLATE II.

Fig. 1, 1a.—*Nicocles scitulus* n. sp., (wing and hind leg).
Fig. 2, 2a.—*Taracticus octopunctatus* Lw., (head and hind leg).
Fig. 3.—*Taracticus brevicornis* n. sp.
Fig. 4.—*Lestomyia sabulonum* O. S.
Fig. 5.—*Lestomyia* n. sp.
Fig. 6.—*Deromyia Winthemi* Wied.
Fig. 7, 7a, 7b.—*Hyperechia atrox* n. sp., (head, wing, and hind leg).
Fig. 8.—*Atomosia puella* Wied.
Fig. 9.—*Pogonosoma dorsata* Say.
Fig. 10.—*Asilus sericeus* Say.
Fig. 11.—*Mallophora laphroides* Wied.
Fig. 12.—*Ommatius tibialis* Say. ♂.
Fig. 13.—*Proctacanthus heros* Wied.
Fig. 14.—*Promachus* n. sp.
Fig. 15.—*Nausigaster punctulata* n. sp.

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DESCRIPTIONS OF NEW BLIND BEMBIDII.

By W. EHLERS, of Cartagena, Spain.

PETROCHARIS n. g.

Apterus. Oculi nulli antennae moniliformes, sub finem incrassatae. Mandibulae superne edentatae, dextra unidentata, sinistra emarginata. Labrum emarginatum. Mentum dente simplici obtuso. Ligula bisetosa antici paraglossis connexis in membranam transverse dilatatum, fere semilunareum producta. Elytra postice rotunda abdomen non prorsus tegentia. Coxae posticae valde distantes. Segmenta abdominalia tria anteriores coalita lamina ventralis segmenti prioris inter coxas posticas lata transversa. Epimeri metasterni supra coxas dente curvato incisura segmenti abdominalis prioris recepto armati. Tarsi pseudo-tetrameri, articulus ultimus et penultimus connexus, tarsi anteriores maris non dilatati sine pulvillos.

Petrocharis Eggersi n. sp.—Testaceus, coriaceus, parce pilosus, elongatus, sub-parallelus, vix convexus. Capite majore elongato, sulcis frontalibus convergentibus. Thorace plano capite breviore, postice versus angustato, marginibus subrectis, denticulis tribus irregulariter serratis, angulo acuto minime producto, margine postico recta. Elytris utriusque setis tribus lateralibus maximis instructis. Long 1.20 mm., lat. 0.30 mm.

Ab Dom. Lib. Bar. ab Eggers in insula Antillarum Scti. Thomae detectus et in honorem ejus nominatus.

Anillus Dohrni n. sp.—Testaceus, robustus ovatus supra convexus; alutaceus praesertim in elytris; sparsim pilis brevibus obtectus, capite brevi, labro lato margine integro. In medio sulco frontali singula seta. Mandibula prae tubero frontali in basi tuberculo minuto instructa. Antennis brevissimis, elytris vix attingentibus. Thorace capite multo latiore brevi, postice versus parum coarctato, angulo ejus postico brevissimo fere rectangulo, duobus tuberculis obtusis munito. Elytris ovato-rotundatis in humeris rotundatis, thorace latioribus, juxta scutellum foveolam singulam setiferam seriem mediam trium setarum ferentibus. Pedibus brevibus, femoribus crassiusculis, tarsorum posticorum articulo primo ultimum longitudine aequante. Long 1.50 mm., lat. 0.50 mm.

Hab.—Florida. Exemplar unicum femineum mihi comunicatum clementia Dom. ill. Dr. G. H. Horn, ex collectione clarissimi Dom. Dr. C. A. Dohrn Stettinensis proveniens, et in ejus honorem nominatum.

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Description of new PSOCIDÆ in the collection of the American Entomological Society.

BY S. FRANK AARON.

The following species, with two exceptions, were collected by myself the past Summer, in or near Philadelphia. They have been described with the aid of a microscope of 50 diameters, and some of the characteristics mentioned can not be clearly seen with an ordinary lens.

Atropos divinatoria, new var. **brunea.**—Pale brown all over, darkest on the head and apex of the abdomen, and with a black spot or rounded blotch before the apex; otherwise like the pale forms, though a trifle smaller.

I found a single specimen running about in a box of insects, with some others of the pale forms.

Atropos purpurea n. sp. *Plate IX, fig.* 1.—Size and general contour as in *A. divinatoria,* the nasus larger and more distinct, as in *Clothilla.* Color deep reddish approaching purple, brightest on the thorax and dorsum of abdomen, becoming reddish-gray toward the sides of abdomen, and pale red on the head, deepest on nasus. Eyes very small, black. Antennae slender, pale, 17 (?) joints, the two basal ones larger, pale reddish. Palpi 5 joints, pale, the basal joint red. First segment of thorax narrow, second broader and three times as long, elliptical, with a small oblong black spot, anteriorly in the middle. Abdomen broader than head, obovate, broadest and evenly rounded at apex; sides nearly straight. On the dorsum of abdomen, from the base of the second to the apex of the fifth segment, a deep black line, spindle shaped, though somewhat irregular, broadest on the third segment; just before the apex, another spot, rounded, deep black. Legs pale reddish, semi-transparent, the femora broadly dilated. Length about 1 millim.

From one example, found running about some old papers, in August. I was instantly attracted by the color.

DORYPTERYX new genus.

Head long, nasus prominent, jaws strong, eyes situated as in *Clothilla.* *No ocelli. Meso and metathorax separated.* Abdomen ovate. *Femora long and slender,* about twice as thick as tibiae. Tibiae longer than femora, the posterior pair very long; *tarsi three joints,* the basal joint half as long as tibiae, the others equal, short. *Wings two, lanceolate, veined,* the basal half nearly twice as wide as the apical half, coming to a rounded point at the apex. Veins two, springing from one short heavy vein at the base, the upper one parallel with and joining the anterior margin at about half or two-thirds the length of the wing, the other nearly parallel with the posterior margin, and joining it near the apex.

This genus is probably most closely allied to *Psoquilla,* Hagen, but is widely different from it in the shape and neuration of the wings, the slender femora and long tibiae.

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Dorypteryx pallida n. sp. *Plate IX, figs.* 2 and 3.—Very pale. Mouth ochraceous; mandibles tipped with fuscous. Nasus luteous, sparsely pilose. Maxillary palpi, pale, five jointed, first, second and fourth short, equal, third long, narrow, fifth longer, clubbed. Labial palpi with the last joint truncate. Antennae pale, filiform, pilose, twenty-four jointed, the two basal joints larger, the second ochraceous. Crown almost white, occiput with long hairs. Thorax and abdomen pale, the latter with irregular, dull grayish buff, or fusceous markings, sometimes suffused over almost the entire abdomen, sometimes wanting. Legs silvery, semi-transparent; tibiae and tarsi pilose. Wings hyaline; the margins and veins silvery. Springing from the margins and veins of the wings are many long silvery hairs, evenly set and generally parallel with each other. Length about 1½ millim.

Described from eight examples. I found these insects in the rooms of the Entomological Society, the first three running about the table near a box of Lepidoptera, from which they probably came; (July 25.) another among some old books, (Aug. 30,) and four others running over a package of new books; (Oct. 30.) The single specimen, (Aug. 30) is without wings, and is very probably the ♀.

I also found the pupae with the last lot; they are smaller, and with oval narrow rudimentary wings. When disturbed these little creatures hop quickly and run rapidly. After they are pasted, the abdomens shrink very much, and the markings change in form and often become black.

Cæcilius definitus n. sp. *Plate IX, fig.* 4.—Pale yellow, sparsely beset with hairs which are thickest and in rows upon the nasus. Antennae about as long as the wings, with ten articles, the basal ones short, the others very long, pale, pilose. Palpi pale. Nasus with indistinct maculose lines, brown: a long round black spot at ocelli, and two dark brown bands, one from each side of the middle of the occiput, to between the ocelli and the eyes, broadest on the occiput. Eyes prominent, large, an irregular mixture of golden yellow and black.. Lobes of the thorax shining black, the sutures yellow; sides with two round black spots, one below the base of the fore wings, the other just above the base of the legs. Legs slightly brown at the joints, pilose, at the base of each hair a black point. Abdomen with the sutures narrowly black, and a black ring before the apex. Wings hyaline, with iridescent reflections; veins brown, sparsely hairy toward base. Pterostigma rounded below, grayer, with many minute black points, from each of which springs a short black hair. At the base of pterostigma a brown spot, and at its apex somewhat brown along the veins. The vein which closes the last posterior elliptical cellule almost touches the second sector, nearly closing the discoidal cellule, which is short and broad. Length to end of wings about 4 millim.

From one specimen in the collection, labelled Pennsylvania.

Psocus variabilis n. sp. *Plate IX, fig.* 5.—Pale yellow. Antennae shorter than the wings, fuscous, pilose, the two larger basal joints pale. Palpi pale, apical half of last joint fuscous. Nasus faintly lineated with gray and covered with fine silvery hairs which are in rows; two irregular brown spots, which are sometimes confluent, upon upper part of nasus: and a broad, dark brown or

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black median band, broadest on the occiput, comes forward to and incloses the ocelli in a round black spot; indistinct pale gray markings above the eyes. Eyes black. Lobes of the thorax shining black, sutures pale. Sides with the sutures sometimes brown. Legs very pale; femora semi-transparent; tibiae pilose, at the base of each hair a minute black point; tarsi fuscous, claws black. Abdomen yellow above, beneath gray, the sutures, which show only at the sides and beneath, black; above a median broken line, two large spots at base and two smaller ones toward apex, black; (these spots sometimes form into lateral longitudinal broken lines, one on each side.) A broad swollen ring around abdomen before apex, shining black; apical piece yellow; appendages pale at the tips, hairy. Wings hyaline, with iridescent reflections, grayer in the pterostigma, which is rounded below. Veins brown; a small black spot at the base of pterostigma, and another, brown and sometimes absent, at the junction of the cubitus and inner margin. Length to end of wings about 4 millim.

From fifteen examples, taken with the larva on tree trunks, mostly oak and maple. It is solitary and inert, always in the deepest crevices of the bark. The immature forms resembles the imago. Sometimes there are no gray lines on the nasus, and the markings on abdomen are often irregular. Monstrosities occur with this species also, for one specimen has, in the left wing, the first apical nervule below the pterostigma, wanting for half its length at the base, and joined to the pterostigma by a transverse nervule, Another has the third posterior nervule forked at its base, in the left wing; and still another has the first and second apical nervules joined together with a transverse nervule, near their furcation in the right wing only.

Psocus inornatus n. sp.—Shining fuscous, or piceous; no lighter markings on body. Antennae shorter than wings, pilose, the apical joints luteous. Palpi fuscous. Legs luteous, the femora semi-transparent, fuscous at knees; tibiae pilose, a black point at the base of each hair; tarsi pale. Thorax black, the lobes shining, reflecting a slight reddish transparency. Abdomen blackish brown, shining. Wings exactly as in the preceding species, except the veins which are paler brown. Size and general contour as in the preceding.

From one specimen, taken among the foliage of white oak.

Psocus sexpunctatus Linné.

The addition of this species to our North American Fauna, I believe is now for the first time recorded. I procured two specimens agreeing thoroughly with M'Lachlin's description, (Ent. Mo. Mag. Vol. 3, 241.) and I believe it is an indigenous species, having found it on a white oak trunk, in remote woods, several miles from Philadelphia.

Psocus atratus n. sp. *Plate IX, fig.* 6.—Black; shining on nasus. Mandibles partly dull yellow. Antennae shorter than wings, pilose, the hairs fuscous. Palpi with fine short white hairs and a few of the same on nasus. Eyes black. Lobes of thorax dull black; suture a little paler. Legs black, pilose; the femora partly fuscous. Abdomen with no lighter markings. Anterior wings fuscous,

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black at the apical two-thirds of the pterostigma and a little below it. A hyaline band crosses the wing from the base of the pterostigma, through the apical half of the discoidal cell to the posterior margin. A hyaline spot on the inner margin just below the cell; a large hyaline apical space between the pterostigma and the second sector, and three hyaline marginal spots, one in each of the first three posterior marginal cells, the first one the smallest. The basal third of the pterostigma and a little below it forming a pure white spot. Veins fuscous, blacker toward base, white along the apical angle and closing vein of the discoidal cell to inner margin, and at the furcation of the two first apical nervures. Another specimen has a large patch over the middle of the median space, a small spot on inner margin below cubitus, and another small spot within the base of the second posterior marginal cell, hyaline. Also the apical hyaline space has some faint cloudy markings, and the three marginal spots are larger. Posterior wings hyaline, pale cloudy fuscous markings along the anterior margin. Length to end of wings about 2½ millim.

From two examples found in the crevices of the bark of a black oak, in woods. Very difficult to distinguish from the bark.

Psocus speciosus n. sp. *Plate IX, fig.* 7.—Fuscous; head testaceous. Antennae longer than wings, fuscous, pilose, testaceous at base, thirteen jointed, the slender joints very long. Last joint of palpi, black. Clypeus pale. Nasus faintly lineated with pale. Some indistinct and irregular paler markings on dorsum and occiput. Eyes black. Thorax shining black, the apex of the mesothorax, luteous. Abdomen fuscous, luteous toward the apex. Legs luteous; tibiae pilose, a black point at the base of each hair; apex of tibiae and the tarsi fuscous. Anterior wings hyaline; basal third with a broad fuscous band, which commences in the cubital space near the base and extends along the inner margin, bending up to, and above the basal angle of the discoidal cell; a broad fuscous band from the apex along the posterior margin to the fourth cellule where it bends upward, crossing the wing and dividing above the middle, the narrow branch reaching the apex of the pterostigma, and the other reaching the anterior margin at the base of the pterostigma. Pterostigma with the basal two-thirds yellow, the apex rich brown. Veins fuscous, pale yellow at the base of the wing, and the posterior marginal vein yellow at the hyaline band. Posterior wings hyaline, clouded with fuscous at the posterior apex. Length to end of wings nearly 5 millim.

From two examples collected by H. K. Morrison in North Carolina.

Elipsocus maculosus n. sp. *Plate IX, fig.* 8.—Pale yellow. Antennae pale, sparsely pilose, annulated with fuscous; (broken). Palpi pale. Labrum with a black spot in the middle. Nasus lineated with gray and irregular grayish markings upon the crown. Small black spot at ocelli. Eyes black. Thorax fuscous. Abdomen pale yellow. Legs semi-transparent, pale; the tibiae and tarsi pilose, at the base of each hair a black point. Anterior wings silvery hyaline, pterostigma the same; a very faint gray spot at the lower angle of the pterostigma, and one or two of the same spots in each of the cells. Veins silvery, with black hairs, at the base of each hair a minute black point within a rounded fuscous spot, giving the appearance of white veins evenly spotted with fuscous. Posterior wings silvery hyaline, the veins fuscous.

From one specimen taken among the foliage of chestnut.

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Synopsis of the APIONINAE of North America.

BY JOHN B. SMITH.

The subfamily Apioninae according to the new classification forms a part of the family Curculionidae, and is defined as follows:—"Mentum narrow, linear, much longer than wide, inserted upon a short gular peduncle of equal width; slightly channelled at tip, reaching nearly to the mandibles, and quite concealing the ligula and palpi which are very small, maxillæ entirely filling the buccal fissures with a large corneous mass: there is but one broad lobe, densely fringed with hairs; palpi not visible; on dissection they appear very short, with not more than three joints. Mandibles three toothed, the middle tooth curved, acute, forming the apex; near the tip on the anterior edge is a small tooth; the third tooth is on the inner side and very large. Antennæ inserted in foveæ, at the sides of the beak, eleven jointed, straight, first joint longer than the succeeding ones; 9–11 broader and longer, forming an oval pubescent club which is pointed at the end.

Head prominent, not deflexed, not narrowed behind the eyes, which are rounded, convex and not granulate; beak long and slender, sometimes stouter toward the base; with antennal grooves.

Prothorax truncate in front, without postocular lobes, subsinuate behind, gradually narrowed from base to tip; prosternum very short, coxal cavities rounded, confluent, closed behind; prosternal sutures distinct.

Mesosternum small narrow between the coxæ; side pieces diagonally divided; epimera triangular pointed at the inner side, and not attaining the coxal cavities. Metasternum a little longer than the first ventral segment, side pieces narrower.

Elytra ample sometimes almost ventricose, deeply striate, entirely covering the pygidium; without epipleura; fold on the inner surface parallel with the side margin, diverging gradually from it toward the tip. Wings large.

Abdomen with the first and second ventral segments large, closely connate, with a fine straight suture; third and fourth segments very short, sutures straight, fifth longer, flat, rounded at the tip; dorsal segments membranous, pygidium small; anterior coxæ conical, prominent, contiguous; middle coxæ round, slightly separated.

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Legs rather long and stout, thighs somewhat clavate; hind trochanter long; tibiae truncate at tip, without spurs or spines; tarsi dilated, first joint scarcely longer, third bilobed, claws divergent, appendiculate, toothed or simple.

The species have a peculiar appearance and are easily recognized by their small size, usually black color, and straight antennae. They are common everywhere, but are not often collected, and are entirely unnamed in collections generally. A large material had accumulated in the collections of Drs. LeConte and Horn, of Philadelphia, which they kindly allowed me to use; Prof. Riley and Mr. Ulke, of Washington, have sent me their material, and the large collections of Texan and Florida species made by Mr. Schwarz, I owe to the kindness of that gentleman; my own collection contained quite a number of species, and while there are undoubtedly many more species to be discovered, the species named in this paper will probably cover anything now in collections.

The larvæ have not been described, but they have been found in seeds of *Tephrosia virginica* (*segnipes*, *fide* Riley) *Baptisia tinctoria* (*rostrum*, *fide* Harris Inj. Ins. 67,) and *Robinia pseudacacia* (*nigrum fide* Harris *loc cit* et labels on insects coll. LeConte and Horn). Mr. Riley informs me that he has found *fraternum* on *Phaseolus pauciflora*, and that the larva of *griseum* probably bores in potato vines; *artemisiae* has been bred from a gall on *Artemisia tridentata*, and *Podapion gallicola* is described by Mr. Riley as a true gall maker on *Pinus inops*. It is probable that a majority of the species will prove seed feeders, while not a few—especially those of the first groups may live in the stems or twigs of plants.

The species are divided in the synopsis by the form of the thorax, the shape of the elytra, of the rostrum and of the femora. The tarsal claws seemed at first to offer the most natural division, but while a large part of the species have the claws dentate in both sexes, and a few seem to have them simple in both sexes, there are some species in which the ♂s have the claws toothed while the ♀s have them simple. Of some species I did not have both sexes, so that I could not safely use this character. Groups I, II and *Podapion* have the claws simple in one sex at least, and they separate very readily by superficial characteristics; Groups III, IV and V usually have the claws dentate in both sexes. In Group I, I have used the dilation of the rostrum to separate the species; in the other groups this character loses value and cannot be relied upon. Group III is separated by the form of the rostrum which is usually short, strong and punctured and tapers to the tip; in some

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species the ♀ rostrum is longer and not so distinctly attenuate, but it is not dilated at tip as are the species of the other sections. The antennae did not seem to me to afford any safe guide, though it differs somewhat in position and proportion; other characters used will be referred to when they occur, but none of them must be strictly and literally taken for the species vary greatly, and a little variation one way or another may occur without, however, conflicting with the character used to isolate an allied species.

The males may be recognized by the divided pygidium.

Two genera are described as occurring in an fauna, the old genus *Apion* of great extent and varying greatly while retaining for its species a remarkable similarity of superficial appearance, and *Podapian* Riley described on a single peculiar species. They are easily distinguished by the tarsi.

Tarsal joints subequal in width, not broader than long.....**Apion.**
Tarsal joints widening to fourth joint; joints wider than long, the fourth much the widest.....**Podapion.**

APION Hbst.

Of this genus five sections of very unequal extent are indicated and may be recognized as follows:

Slender; thorax narrow, cylindrical, as long as or longer than wide, not perceptibly wider at base; sides usually equal, sometimes slightly dilated at middle; elytra narrow, oval. Except in *parallelum* the species are not pubescent.
Femur abruptly clavate, with an obtuse tubercle at inner side.....SECTION I.
Femur not abruptly clavate and without tubercles.....SECTION II.
More robust, usually pubescent, often densely so. Thorax never longer than wide, usually transverse, rarely cylindric, usually depressed above.
Rostrum tapering to tip, usually short and punctured.....SECTION III.
Rostrum not tapering to, but rather slightly enlarged or dilated at tip.
Thorax more or less distinctly widening to base, sometimes cylindric, sides equal or arcuate, but never wider at middle than at base.....SECTION IV.
Thorax usually depressed, widest at or behind middle and constricted at base. Elytra ovate; thorax not cylindric.....SECTION V.

SECTION I.

The species of this section are elongate, slender, shining black, with none or but small humeri, and abruptly clavate femora (Plate 3, figs. 1 and 20); they are recognized at sight, and they may be determined as follows:

Elytra without humeri angles.
Eyes somewhat prominent, form very slender; thorax densely and coarsely punctured, 2 mm.....**erraticum.**
Eyes less distinct; form more robust; thorax less densely and coarsely punctured, 2 mm.....**obsoletum.**

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Elytra with distinct humeral angle.

Humeri small, form slender, 1.5—3 mm..... .....**erythrocerum.**

Humeri larger, form robust, 2.25—3 mm.....**robustum.**

A. erraticum n. sp.—Entirely black. Head elongate, grossly and densely punctured, rostrum moderate in length, slightly curved, slightly dilated near middle, thence more slender to tip; antennae moderate, basal joint stoutest, not longer than third; second ovate, half shorter than first, club rather slender. Thorax narrow, cylindric, very slightly widening at middle, coarsely and densely punctured, an impressed dorsal line. Elytra with scarce evident humeri, sides narrow, elongate, ovate; striae narrow, punctures fine and distant; intervals flat. Sternum punctured in parallel rows; abdomen coarsely punctured. Length 2 mm.

Hab.—Texas, Iowa

Distinguished from the other species of the group by the prominent eyes and very slender, narrow, ovate form. The tarsal claws are dentate in one sex. A few specimens only.

It may be stated here that characters used in the synopsis are not always recapitulated in the descriptions, that the punctuation differs somewhat in coarseness in the specimens, and that the elytral stria differ somewhat in depth and in the distinctness of their punctures. The rostrum of the ♀ is usually longer than that of the ♂, and less distinctly dilated when there is any dilatation.

A. obsoletum n. sp.—Black, legs piceous, more robust and very little larger than the preceeding. Eyes moderate, scarcely prominent; head canaliculate; rostrum slightly longer than in *erraticum*. Antennae elongate, piceous brown, basal joint equal to second and third together, the two latter equal in length. Thorax as before, but less coarsely punctured; elytra more broadly ovate; striae distinct· punctures evident and approximate, intervals convex. Beneath densely punctured. Length 2 mm.

Dacota, Michigan, Canada.

Easily distinguished from the preceding by the characters given, and by the more portly appearance of the insect. The color of the legs varies from dark piceous brown to bright red-brown, hardly two specimens being alike. The geographical range of the species is wide, and it will probably be found all over the country. The specimens now known are few, and are scattered in several collections.

A. erythrocerum n. sp.—Entirely black. Head coarsely punctured, eyes not prominent; rostrum very slightly dilated at middle, moderate in length; antennae as in *obsoletum*, second joint ovate, stout, third clavate and more slender. Thorax densely and coarsely punctate, else as before. Elytra with distinct humeri, form stout, widest behind middle; striae fine, punctures scarcely evident, intervals convex. Beneath densely punctate; metasternal punctures in longitudinal rows to middle, and thence transversely forward to tip. Length 1.2 mm.

Hab.—Kansas, Middle States, D. C. and Tenn.

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Distinguished from the preceding by the small size and evident humeral angles. Widely distributed, but only occasional specimens from each locality.

A. robustum n. sp.—Entirely black, antennae sometimes piceous. Head finely canaliculate or confluently punctured between the eyes; the latter not prominent; basal joint of antennae longer than second and third combined, else as before. Elytra twice as wide at base as base of thorax, wider behind middle, humeri acute. Striae distinct punctures evident, intervals wide, flat. Beneath abdomen rather finely punctured. Length 3 mm.

Hab.—Tex., Mo., Iowa.

Larger than all others of this section, and hence easily distinguished. The preceding is the only other species with evident humeri, and it is scarcely more than one-half as large as this species.

The four species of this section differ from all others known to me, by the peculiar structure of the anterior femora, which seems not to occur in any exotic species.

SECTION II.

The species of this section are more numerous, and closely resemble in general appearance the preceding, while evidently distinct by the lack of the femoral tubercle. Plate 3, fig. 1, shows the form of most species in section, while a few approach figs. 10 and 15; *punctinasum*, *parallelum* and *sordidum* are aberrant while evidently belonging here, and have each a unique and easily recognized appearance. The species are as follows:

Humeri of elytra wanting.
  Rostrum dilated near base, elongate, slender, 2.5 mm.....**protensum.**
  Rostrum not dilated near base.
    Rostrum unusually stout and punctured, 1.4 mm.....**punctirostre.**
    Rostrum elongate.
      Pubescent, very narrow, parallel, 1.5 .....**parallelum.**
      Not pubescent.
        Elytral striae fine, intervals wide, flat.
          Form very slender, thorax without impressed line 1.5 mm..**estriatum.**
          Form more robust, thorax with evident impressed line.
            Striae of elytra moderate, punctured. 2.5 .....**ovale.**
            Striae of elytra narrow, punctures obsolete, 2 mm.
impunctistriatum.
        Elytral striae wide, intervals convex.
          Black, punctures of striae moderate, form convex, 1.5 mm.
desolatum.
          Fulvo piceous, punctures of striae gross, form subdepressed, 1 mm.
sordidum.

Humeri of elytra evident.
  Rostrum not dilated near base.
    Eyes distinct, somewhat prominent, head wide.

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Form slender, elongate, 2 mm.....**Floridanum.**
Form robust, elytra broadly oval, widest behind middle, punctures of striae distinct, thorax elongate, 2–2.5 mm.....**obesum.**
As before, punctures of striae obsolete, color brassy or bronze black, 1.5 mm. **parvulum.**
Thorax shorter, elytra as wide at humeri as at middle, else as in *obesum*, color black, 1–2.5 mm.....**atripes.**
Eyes not at all prominent; head narrow.
Elytral striae obsoletely punctured, intervals wide, flat, form moderate, 2–2.5 mm.....**cribricolle.**
Elytral striae very fine, intervals wider, form more robust, antennae and legs piceous, 3 mm.....**melanarium.**
Elytral striae evidently punctured, intervals convex, 1 mm...**minutum.**
Rostrum dilated near base.
Head narrow, elongate, eyes small, not at all prominent.
Legs pale or piceous, thorax much longer than wide, 2 mm. **pensylvanicum.**
Legs black, thorax shorter, body more robust.
Striae of elytra distinctly punctured, intervals narrow, 2 mm. **opacicolle.**
Striae of elytra fine, obsoletely punctured, intervals wide, 1—1.5 mm. **cedorhynchum.**
Head wider, eyes moderate, somewhat prominent.
Slender, small; thorax cyindric, 1 mm.....**Texanum.**
More robust; thorax slightly widening at middle, 1.5—2 mm. **ellipticum.**

A. proteusum Lec. Pac. R. R. Expl. and Surv. Ins. 53.—Black. Head elongate, confluently punctured; eyes not at all prominent; rostrum slender, elongate, slightly dilated near middle. Antennae elongate, basal joint as long as second and third, the latter shorter than second. Thorax elongate, but moderately wide, cylindric, slightly wider at middle, coarsely punctured and without evident dorsal line. Elytra regularly oval, narrow, surface scabrous; striae rather superficial, punctures deep, rather distinct, intervals wide and flat. Beneath coarsely punctured. Length 2.5 mm.

Hab.—California.

This is the only species in this section which lacks humeri and has the rostrum at all dilated. Only a few specimens are known and they all have a peculiar sordid appearance caused by the rugose and scabrous surface, which in connection with the structural character renders them easily recognizable. The ♀s usually have rather an elongate rostrum, and it is possible to confound them at first sight with large specimens of ♀ *tenuirostrum*, but the latter belongs to an entirely different § of the genus by structure.

A. punctinasum n. sp.—Black. Head punctured, eyes not prominent; rostrum unusually stout and short in ♂, equally stout but longer in ♀. Thorax as usual in this ♂ in the ♂, but somewhat wider, with sides more rounded in ♀,

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with a dorsal line foveate near base. Elytra but little ovate, slightly aeneous, striae moderate, intervals wide, flat or slightly convex. Length 1.5—2 mm.

Hab.—Wy., Dac., Col.

This species is peculiar by the stout, distinctly punctured rostrum, only one other species in another § (*attenuatum*) approaching it in this respect. The ♀ differs considerably from the ♂, first in the larger but equally stout rostrum, and second, by the thorax which is nearly as wide as long and distinctly wider at middle, and somewhat constricted at base; this makes it resemble *attenuatum* enough to render care requisite to distinguish the species; the rostrum of the ♀, however, is larger than in the ♀ *attenuatum*, and the elytral sculpture among other differences renders a separation possible. The dorsal line of thorax, which becomes foveate at base, is another distinguishing feature of this species and allies it to the following groups where it is the rule. From Wyoming there are four ♂s, (Coll. Dr. Horn) and from Mr. Ulke I received a ♂ and two or three ♀s from Dac. and Calif.; the male agreed with the specimens from Wyoming, the ♀ differed from all the ♂s as above specified, and differed from each other in some points. A large series of this species would be interesting and desirable.

A. parallelum n. sp.—Black, elongate, slender, pubescent. Head moderate, eyes small but distinct, front punctured, rostrum moderate. Antennae with basal joint largest and yellow. Dorsal line of thorax obsolete, punctures moderate, sides equal. Elytral striae wide, punctures distinct, intervals narrow, convex, scabrous. Length 1.5 mm.

Hab.—D. C., Tenn.

Peculiar by the dense pubescence and the very narrow parallel form. The shape of the thorax evidently refers it here, while the dense pubescence as readily distinguishes it from all its neighbors.

Two specimens received from Mr. Ulke from the above localities, one in my collection.

A. estriatum n. sp.—Black, very slender, not pubescent. Head scarcely as long as wide, confluently punctured; eyes distinct, convex; rostrum elongate, slender; basal joint of antennae slightly longer than second; second slightly longer than third. Thorax with punctures rather superficial, usual impressed line obsolete and only very faintly visible at base. Elytra narrow, ovate; striae fine, punctures distinct, intervals wide, flat and smooth. Length 1.5 mm.

Hab.—Can., Col., Tex.

Distinguishable by its slender form, small size and the want of an evident dorsal line on thorax; but few specimens received from widely separated localities.

A. ovale n. sp.—Black, form ovate. Head longer than wide, eyes slightly prominent, rostrum elongate, slender, antennae as before, second joint stoutest

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Thorax with a distinct impressed line. Elytra broadly ovate, striae finely but evidently punctured, intervals very slightly convex. Beneath, sternum evenly and moderately punctured, abdomen scabrous and irregularly punctate. Length 2.5 mm.

Hab.—Mo., Cal.

Ten specimens received from very divergent localities, and presenting nothing peculiar.

A. impunctistriatum n. sp.—Entirely black, rather broadly ovate. Eyes not at all prominent; antennae, head and thorax as before; thorax slightly produced into an obtuse tubercle at middle, rather finely and sparsely punctured. Elytra broadly ovate, widest behind middle; striae very fine, punctures not evident; intervals wide, flat and impunctured. Beneath obviously punctured. Length 2 mm.

Hab.—Texas, D. C.

Presents nothing unusual and much resembles *ovalis*; sufficiently distinct, however, by the smaller size, somewhat stouter form, the slight tubercles or angles at the sides of thorax, the less distinct eyes and the narrow impunctured striae.

A. desolatum n. sp.—Entirely black, slender, very much elongated. Thorax unusually long, moderately punctured, elytra without trace of humeri and very narrow, ovate, striae punctured, intervals convex. Length 1.5 mm.

Hab.—Ga.

Unique in its attenuate appearance, and thereby easily distinguished from others in this group. The elytra lack all trace of humeri; usually even in species which have no obvious humeral angles, there is an elevation more or less distinct on the elytra, which indicates the humeri.

A. sordidum n. sp.—Fulvo piceous, elytra paler, slender, sparsely pubescent. Head broad, eyes distinct; rostrum sulcate from base to middle; antennae short and stout. Thorax grossly, but somewhat sparsely punctured, with a short foveate line at base. Elytra narrow, ovate, humeri very slightly indicated, striae wide and deep, densely and grossly punctured, intervals narrow, carinate. Beneath rather sparsely punctured, more distinctly pubescent. Length 1.25 mm.

Hab.—U. T.

This species was in Dr. Horn's collection, labelled "from galls on *Artemesia*." Subsequently I received the same species from Prof. Riley, with the same legend; whether the species is a true gall maker or only an intruder in the galls from which it was bred is still a question. Most likely it will be found to be the producer of the gall. The few specimens I have seen were all alike, and all from one locality—probably they will be found wherever *Artemesia* grows. The insect is so distinct by color and elytral sculpture that an enumeration of the differences between it and the species associated with it, seems superfluous.

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A. floridanum n. sp,—Black, form rather slender. Head as wide as long, scabrous, punctate, and finely excavate between the eyes; the latter are small and prominent. Antennae long, basal joint exceeding second and third; thorax punctate, opaque, impressed line distinct, elytra with humeri but little prominent, striae fine, punctures obsolete, intervals wide, flat and smooth. Length 2 mm.

Hab.—Fla., Cal., Ariz., Ia., D. C.

Single specimens only from each of the above localities, and presenting nothing peculiar.

A. obesum n. sp.—Black, tibiae sometimes piceous, form more robust. Head finely punctured and scabrous, eyes scarcely prominent, antennae as before; thorax slightly widening at middle, moderately punctured, with impressed line distinct; elytra broadly ovate, nearly as wide at middle as long, humeri evident, striae distinctly punctured, intervals rather narrow, scabrous and punctate. Length 2 –2.5 mm.

Hab.—Mich., Tex.

A few specimens only received, characterized by the very robust body and rather elongate head and thorax. Easily distinguished by superficial comparison from the preceding, and by size from the following.

A. parvulum n. sp.—Bronze or brassy black, sometimes deep shining black. Head rugose and canaliculate between the eyes, the latter scarcely prominent, antennae as before; thorax but little longer than wide, else as before, but more grossly punctured; elytra broadly ovate, but less obese than in the preceding, humeri small, striae distinct, punctures obsolete, intervals rather narrow, convex. Length 1.5 mm.

Hab.—Middle States.

The aeneous lustre and small size will serve to distinguish this species from its near neighbors.

A. atripes n. sp.—Black, glabrous, form robust. Head broad, eyes prominent, head finely rugose, front tri-sulcate. Thorax about as wide as long, slightly coarctate at base and tip, sides slightly rounded, with large, shallow, closely set punctures. Elytra broad, sides nearly parallel to middle, striae deep, distinctly punctured, intervals moderate, flat and punctured. Length 1.25—1.5 mm.

Hab.—Ga., Fla., Cal.

This may possibly be the *A. nodirostre* Gerst. Stet. Ent. Zeit. 1854, 241. His species is from Florida, and the description agrees tolerably well with this insect, but the rostrum is not at all dilated and some other details do not agree, and I prefer therefore to consider this as a new species.

A. cribricolle Lec. Pac. R. R. Expl. and Surv. Ins. 53; *porosicolle* Gem. Col. Hefte viii 122.—Entirely black, form robust. Head and thorax elongate, distinctly longer than wide, and grossly punctured, antennae as usual. Elytra moderately ovate, widest behind middle, humeri distinct; striae fine, superficial, obsoletely or distinctly punctured, intervals wide, flat and punctate. Length 2—2.5 mm.

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Hab.—Col., Tex., Fla., Neb., Ariz.

A species without marked peculiarities and more common than most of the others in this section.

A. melanarium Gerst., Stet. Ent. Zeit. 1854, 261.—Black, legs and antennae blackish piceous, often paler, form more robust than in the preceding. Head and thorax as before, but less coarsely punctured and with a distinct tubercle or angle at sides. Elytra nearly as wide as long, humeri distinct; striae fine, intervals wider than in *cribricolle*. Length 3 mm.

Hab.—Tex., Vanc. and Ga., Ariz.

This species and the preceding are very closely related. The general form and proportion are nearly the same, and care is necessary to separate them. The punctuation of the elytral striae differs considerably in the specimens.

A. minutum n. sp.—Black. Head very finely and somewhat sparsely punctured, rostrum rather short; thorax finely and sparsely punctured, impressed line distinct. Elytra scarcely wider than long, humeri small, striae narrow, intervals convex. Beneath sternum bistriate, else finely scabrous. Length 1 mm. (scarcely).

Hab.—Fla., N. Y.

Easily known from its near neighbors by the very small size.

A. pensylvanicum Boh., Schoen Curc. 5, 417.—Black, legs and antennae piceous brown, form moderate. Head very long, densely punctate and somewhat excavate between the eyes, which are not at all prominent. Antennae moderate in length, basal joint longer than second and third, second shorter than third but more robust. Thorax finely punctured, dorsal line obsoletely indicated. Elytra with distinct though not prominent humeral angles, moderately ovate; striae moderate, punctures fine. Sternum bistriate, abdomen punctured. Length 2 mm.

Hab.—Cal., Ariz.

The first of the species with dilated rostrum and distinct by the attenuate head and thorax.

A. opacicolle n. sp.—Black. Head scabrous with fine furrows between eyes. Antennae short, joints proportioned as before. Thorax very slightly widening to base, scabrous and irregularly punctured without the dorsal impressed line; elytra short, but little wider behind middle; striae deep, punctures distinct; intervals moderate, convex and opaque. Beneath sternum sparsely, abdomen densely and coarsely punctured. Length 2 mm.

Hab.—Cal., Ariz., Or.

Readily distinguished from the preceding by the form.

A. oedorhynchum Lec., Pr. Ac. N. Sc. Phil. 1858, 78.—Black. Head densely punctured, antennae as before. Thorax, sides equal, densely and irregularly punctured, with a distinct impressed line. Elytra but little longer than wide, humeri broad. Beneath moderately punctured. Length 1—1.5 mm.

Hab.—Cal., Ariz.

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Closely related to the preceding, but easily distinguished by the smaller size, and the sculpture and form of thorax.

A. texanum n. sp.—Black. Head densely and coarsely punctured; antennae as before, thorax densely and coarsely punctured with an evident impressed line. Elytra regularly ovate, humeri scarcely prominent, striae distinct, punctures evident, intervals moderate, smooth, convex. Beneath, sternum moderately, thorax coarsely punctured. Length 1 mm.

Hab.—Texas.

One of our small species and the smallest in this subsection, and therefore easily recognizable.

A. ellipticum n. sp.—Black. Head as wide as long, densely but rather finely punctured, distinctly excavated between the eyes; rostrum short; antennae inserted rather close to base, joints proportioned as usual. Thorax but little longer than wide, densely and finely punctured. Elytra broadly ovate, widest at middle, striae deep, punctures rather small, intervals wide with a row of fine punctures. Sternum striate, abdomen punctured. Length 1.5—2. mm.

Hab.—Neb., La.

The head of this species is unusually large, and the antennae are inserted unusually close to base. These characters, in addition to the thorax, which is slightly wider at middle, renders the recognition of the species tolerably easy. They seem to be common enough in Nebraska, judging from the number of species recorded from that locality.

SECTION III.

The species of this group are distinguished by the generally short, robust rostrum, more or less attenuate toward tip (Plate 3, fig. 8), most distinctly so in the ♂. The form is generally robust, often obese, as in *brevicolle*, but generally more like Plate 3, fig. 11; they are closely related usually, but are easily distinguished as follows:

Humeri of elytra wanting, 2 mm..... **californicum.**
Humeri of elytra evident.
Base of thorax straight or not perceptibly sinuate.
Thorax moderate in length, sides arquate, rounded.
Legs and antennae rufous, 1 mm..... **decoloratum.**
Legs and antennae black
Basal joint of antennae short, 1.5 mm..... **concoloratum.**
Basal joint of antennae long, 1 mm..... **carinatum.**
Thorax short, sides straight, equal.
Humeri broadly prominent, body very robust, slightly aeneous 2 mm. **brevicolle.**
Humeri but little prominent, opaque.
Body short, robust, thorax moderately punctured, 1.5 mm.... **typicum.**
Thorax densely and coarsely punctured, 2 mm. ..... **abdominale.**
Body longer, more slender, 2.5 mm..... **antennatum.**

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Base of thorax distinctly bisinuate.
Thorax widest behind middle, distinctly narrowed at base.
Surface pubescent, thorax greatly narrowed, 2 mm.....**cordatum.**
Not pubescent, thorax less narrowed behind, 1.5 mm.....**capitatum.**
Thorax widest at base.
Head wide, eyes distinct, and rather prominent, 1.5 mm.....**oblitum.**

A. californicum n. sp.—Black, antennae piceous, form narrow, ovate. Head broad, coarsely punctured; eyes globose, prominent; antennae inserted near base of rostrum; basal joint equal to second and third; thorax about as long as wide; widest before base; sides sinuate, densely and coarsely punctured, with a longitudinal foveate puncture at base. Elytra regularly ovate; striae wide and shallow; punctures distant, intervals moderate, very finely punctate. Beneath coarsely and rather distantly punctured. Length 2 mm.

Hab.—California.

Easily distinguished from the others in this section by the want of humeri. Described from a single specimen (♂?) in Dr. Leconte's collection. A second specimen received long afterward from Mr. Bolter, of Chicago, labelled "1750 feet Geysers Cal., May 21." Agrees very well with the type except that the rostrum is much longer; scarcely attenuate toward tip, and the body much more robust; the specimen is evidently a ♀, and has the same dull and rather sordid appearance of the type, so that the most cursory examination refers it to this species at once; meanwhile the characters of the rostrum and body in the description are most applicable to the ♂.

A. decoloratum. n. sp.—Black; antennae and legs piceous; legs often paler, usually rufous. Head longer than wide, densely punctured; eyes convex, but scarcely prominent; rostrum short and stout; antennae short; basal joint scarcely longer than second, and not so stout. Thorax as long as wide; widest at base; sides rounded, grossly punctured, and with a short impressed line at base. Elytra humeri moderate; striae evident, punctures distinct, intervals convex, scabrous. Beneath moderately punctured. Length 2 mm.

Hab.—N. C., D. C., Ariz., Md., Va.

Distinguished at a glance from the others in this section by the red legs.

A. concoloratum n. sp.—Black; head elongate, rugose, and punctured; eyes large, but occasionally prominent; rostrum distinctly dilated near base; thorax as before. Elytra broadly oval; striae wide and deep; punctures profound; intervals narrow and convex. Length 1.5 mm.

Hab.—Cal., W. Va., Ga., Mich., Fla.

Rather obscurely characterized, and distinct rather by an aggregation of small differences than by any striking peculiarity.

A. carinatum n. sp.—Entirely black, very robust. Head transverse, densely punctured; carinate between the eyes, which are not prominent; antennae short; thorax wider at base than long; densely and grossly punctured,

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with a distinct impressed line. Elytra almost hemispherical in form; striae deep, punctures large, interspaces convex and narrow. Beneath densely punctured. Length 1 mm.

Hab.—Fla., Texas, Neb.

A. brevicolle n. sp.—Black, often slightly aeneous. Head longer than wide, densely scabrous, and canaliculate between the eyes; the latter small and not prominent; basal joint of antennae equalling second and third; the two latter subequal. Thorax as wide as long, sides equal, moderately punctured, impressed line distinct. Elytra as wide as long; little wider at middle; humeri broad, prominent; striae fine, punctures fine, sometimes scarcely evident; intervals wide, flat, and with fine punctures. Beneath moderately punctured. Length 1.5—2 mm.

Hab.—Cal., Texas, Ariz.

Easily recognized by the small head and thorax, and the very large obese body. It seems thus far limited to the Southwest, but is not uncommon there.

A. typicum n. sp.—Black, form robust. Head elongate, moderately punctuate; eyes not at all prominent; antennae moderate: basal joint longest, and rather slender, inserted near to base of rostrum. Thorax short, narrow; sides parallel, equal, moderately, or rather coarsely punctured, with distinct dorsal line. Elytra almost as broad as long, subglobose; humeri not greatly prominent; striae deep, distinct; punctures not distinctly evident; intervals rather wide, strongly convex. Beneath densely scabrous and punctured. Length 1—1.5 mm.

Hab.—Cal.

Rather an obscure species, somewhat smaller than its allies, and somewhat differing in form. It seems not uncommon.

A. abdominale n. sp.—Black, form very robust. Head much broader than long; very densely and coarsely punctured; eyes prominent, large; a distinct sulcus from base of rostrum to middle, where it is distinctly dilated; antennae short and stout; basal joint half exceeding second, and with it forming one-third the whole length of the member. Thorax very short and narrow; very grossly and densely punctured, with a larger foveate puncture near base. Body very convex, almost globose; elytra scarcely longer than wide, widest behind middle; striae wide, punctures deep and close; intervals moderate, but little wider than striae. Beneath very densely, but not so grossly punctured. Length 2 mm.

Hab.—Ariz., Ill., D. C.

Another obese species, readily distinguished by the very coarse punctuation.

A. antennatum n. sp.—Black, more elongate than the preceding. Head transverse, rather finely punctured, with a more or less distinct impression on front; eyes not prominent; antennae moderate; basal joint not elongate, inserted two-fifths from base of rostrum. Thorax, sides straight, about as long as wide, widest at base; punctuation rather sparse and fine; dorsal line more or less distinct, sometimes obsolete. Elytra moderately ovate, not obese; striae distinct, punctures large; intervals wide, and somewhat convex; finely scabrous. Beneath finely and sparsely punctured. Length 2 mm.

Hab.—Cal., Ariz.

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Slighter than its allies; opaque and not at all shining. The rostrum differs somewhat in form, being in some specimens almost equal, or even at first sight appearing slightly dilated at tip, but it is always robust and punctuate, and in the majority of specimens it is gradually and slightly attenuated to tip.

A. cordatum n. sp.—Black, moderately pubescent; form elongate. Head elongate, rugose; distinctly sulcate between the eyes; the latter moderate and not prominent; antennae moderate; basal joint slightly exceeding second, but more slender. Thorax flattened above, decidedly widest behind middle, and much constricted at base; sides somewhat acutely produced behind middle. densely and irregularly punctured, a deeper foveate line near base. Elytra fully one-half longer than wide; sides parallel; striae deep, punctures distinct, intervals flat and finely punctured. Beneath moderately punctured. Length 2 mm.

Hab.—California.

The strongly constricted thorax renders this species peculiar, and its recognition easy; the rostrum is only moderately attenuated toward tip, and is rather longer than usual in this section. Only a single specimen, Coll. Dr. Leconte.

A. capitatum n. sp.—Black, not at all pubescent. Head narrow, small, finely and densely punctured; eyes not prominent. Thorax not much wider at middle than at base, densely and irregularly punctured, with an indistinct longitudinal line most evident at base. Elytra broadly ovate, widest about middle, scarcely one-half longer than wide, humeri broad; striae narrow, punctures distinct, intervals moderate, flat. Length 1.5—1.75 mm.

Hab.—Mich., Neb., Oregon.

Easily distinguished from the preceding by the lack of pubescence, and by the form of the thorax.

A. oblitum n. sp.—Black, form moderate. Head transverse, rather sparsely punctured; eyes distinct, and somewhat prominent; distinctly so in some specimens; rostrum unusually slender for this section, distinctly dilated near base; antennae moderate, inserted one-third from base of rostrum. Thorax transverse, widest at base, sides arquate, or rounded; coarsely punctured, and with a deep foveate elongate puncture near base. Elytra moderate ovate; striae distinct, punctures large, intervals wide, and somewhat convex, shining. Beneath rather finely and sparsely punctured. Length 1.5—2 mm.

Hab.—Col., Cal., Texas, Kan., Fla.

Distinguished by the form of thorax; bears a superficial resemblance to *antennatum*, and has the same general form of body.

SECTION IV.

The species of this section are by all odds the most numerous, and there are several distinct forms indicated, which I use to form groups of closely allied species. All of the species have the thorax as wide at base as at middle, or it is widest at base with the angles acute; they are

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usually pubescent, and generally have a foveate puncture or impressed line at the middle of base, rarely reaching to the apex, and not attaining one-half that distance; by the aid of the figures and the table the following groups may be recognized, the name of a typical species being used to designate the groups:

Body obese, elytra almost as broad as long..... *Group* **ventricosum.**

Body more elongate, very convex; elytra narrow at base, dilated to behind middle; pear-shaped..... *Group* **pyriforme.**

Body more equal, moderately convex; elytra more regularly ovate. *Group* **crassinasum.**

Body robust, sub-depressed above; sides of elytra parallel; thorax not cylindric. *Group* **segnipes.**

Body subcylindric; thorax cylindric; sides usually arquate, and very slightly constricted at base; elytra elongate; sides subequal..... *Group* **troglodytes.**

Group **ventricosum**, Plate 3, Fig. 9.

This group contains but few species, very robust in form, which are as follows:

Thorax very short, sides equal; elytra nearly as broad as long, 1.5—2 mm. **ventricosum.**

Thorax moderate in length, sides somewhat arquate, elytra less broad, color bronze-brown, eyes prominent, head broad, 1 mm..... **subglobosum.**

Color black, slightly aeneous, head narrower, eyes less prominent, not evidently pubescent, 1.5 mm..... **turbulentum.**

Opaque, distinctly pubescent, 1 mm..... **minor.**

A. ventricosum Lec. Pr. Ac. N. Sc. Phila., 1858, 78.—Black form, very obese. Head elongate, distinctly punctured; eyes not prominent, rostrum distinctly dilated near base. Thorax densely punctured; sides equal, very little wider at base; a short longitudinal dorsal fovea. Elytra very broadly ovate; humeri prominent, striae fine, punctures distinct, intervals wide and flat. Beneath, densely punctured. Length 1.5—2 mm.

Hab.—Cal., Ariz., Texas, Mass.

Distinguished from the others in this group by the very short thorax and the ventricose elytra. All the species in the group have the elytra very broad, but none so broad as this, and in none of them is the thorax so disproportionately short and narrow.

A. subglobosum Gerst. Stet. Ent. Zeit., 1854, p. 243.—Brassy, or bronze-black, legs piceous, sparsely pubescent. Head transverse, longitudinally rugose, eyes prominent, antennae elongate, slender, second joint nearly equalling first in all particulars. Thorax cylindrical, sides sub-equal, slightly widening to base, moderately punctured, longitudinal impressed line from base to middle only. Elytra widest behind the middle, striae narrow, punctures small and rather close, interspaces wide, flat, and smooth. Beneath finely scabrous and punctate. Length 1 mm.

Hab.—Florida.

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I have seen two specimens only; easily distinguished by their bronze color from the others in this group.

A. turbulentum n. sp.—Black, often somewhat aeneous, and sometimes slightly pnbescent: somewhat less obese than the preceding; rostrum slender, sometimes a little dilated near middle; head punctured. Thorax coarsely punctured with a distinct impressed line. Elytral striae wide, shallow; punctures large, intervals moderate, convex. Beneath punctured. Length 1.5 mm.

Hab.—Middle States, Texas, Cal.

Rather common and widely distributed. It varies somewhat in size, color, and vestiture, being occasionally quite perceptibly pubescent.

A. minor n. sp.—Differs from the preceding by the smaller size and the distinct pubescence; the thorax is wider at base, and has a deep fovea on dorsum; the punctuation is coarse and dense; elytra somewhat more ovate, and slightly less obese than usual. Length 1 mm.

Hab.—Cal., La.

Group **pyriforme**, Plate 3, Figs. 3 and 18.

The species in this group are very readily recognized by their very convex form and pear-like shape; they number but three, and each is aberrant in color, so that irrespective of the structural characters of the group, the species can be recognized at sight. They are tabulated as follows:

Color black, legs red, 3 mm..... **dilatatum.**

Color fuscous, with pale pubescence; elytra with a dark, naked, median fascia, margined with dense paler pubescence, 2—3.5 mm. ..... **herculanum.**

Color black, elytra rufus, 1.5—2 mm..... **pyriforme.**

A. dilatatum n. sp.—Black legs except knees, and tarsi pale red or yellow; pubescent. Head elongate, punctured, and rugose between the eyes, the latter not prominent; rostrum greatly dilated near base; basal joint of antennae stout, but little longer than second. Thorax densely and finely punctured, wider at base than long; base bisinuate. Elytral striae distinct, punctures evident, intervals moderate and flat. Beneath densely and finely punctured. Length 3 mm.

Hab.—Arizona.

Unique in form and coloration, and therefore distinguishable at a glance; the form is the extreme of dilation of the elytra behind the middle, while the base is comparatively narrow; pear-shaped best expresses it. Several specimens seen, and all from Arizona.

A. herculanum n. sp.—Piceous brown pubescent, with a naked darker fascia on elytra. Head short, broad, finely punctate; eyes moderately prominent, rostrum elongate, slender equal throughout; antennae inserted close to base of rostrum, first joint equalling second and third. Thorax about as long as broad, sides sinuate, slightly cordate before middle, widest near base; above finely punctured, with a short impressed dorsal line. Elytra humeri small; striae moderate, evidently punctured; intervals flat, scabrous; surface covered with a fine greyish

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pubescence, leaving only a moderately wide fascia on middle naked, the space margined by paler whiter pubescence. Beneath moderately punctate. Length 2—3.5 mm.

Hab.—Penn., N. Y., D. C., Mass.

A very variable species as regards size and intensity of color, one specimen taken by me in New York being fully 3.5 mm. in length, and pale brown in color, and the impubescent fascia strongly marked. A number of specimens from Massachusetts seen in Mr. Austin's collection were scarcely 2 mm. in length, and of an almost uniform sordid brown. It seems not uncommon.

A. pyriforme n. sp.—Black, elytra brown-red; pubescent. Head elongate, narrowing from base to rostrum; eyes not at all prominent; front densely punctured and rugose, clothed with fine white pubescence; rostrum short and thick; antennae moderate, joints proportioned as before. Thorax as long as wide; wider at base, densely punctured and pubescent, with a longitudinal impressed line profound at base, obsolete toward tip. Elytral humeri small, striae profound, punctures moderate, intervals narrow and convex. Beneath sternum with three longitudinal striae, abdomen punctured. Length 1.75—2.25 mm.

Hab.—Arizona.

The type of the group and rather more compactly built than either of the two others. The difference in coloration between the thorax and elytra will serve to distinguish it. A few specimens only, all from one locality.

Group **crassinasum**, Plate 3, Fig. 13.

The species of this group are moderately convex, the elytra narrow or moderately ovate in form; the species, excepting *modestum* and *perminutum*, are closely allied, but yet sufficiently distinct to prevent mistakes. The following table will aid in identifying them:

Thorax narrow, cylindric; sides equal, but little wider at base than apex.
  Distinctly pubescent, basal joint of antennae long, piceous, 2.25 mm. **Walshii.**
  Sparsely or not pubescent; basal joint of antennae short, black, 2 mm. **vicinum.**
Thorax distinctly wider at base; sides oblique or arquate,
  Rostrum greatly dilated near base.
    Color brassy black, distinctly pubescent, 2.25 mm..... **crassinasum.**
  Rostrum but little or not at all dilated near base.
    Elytra widening to behind middle, size large, 2—2.25 mm..... **proclive.**
    Elytra more equal; size small.
  Legs black; pubescent, 1 mm..... **modestum.**
  Legs red; not at all pubescent, 1 mm..... **perminutum.**

A. Walshii Smith, *lanuginosum*. Walsh Pr. Ent. Soc. Ph., 1867, 269.—Black, pubescent. Head small, conic, narrowing regularly to rostrum, densely punctured; eyes not at all prominent, rostrum elongate; basal joint of antennae equal to one-third of whole length of that member; second nearly half as long as first. Thorax

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widest at base, dense punctured with an indistinct and irregular longitudinal line. Elytra more than one-half longer than wide; humeri small; striae deep, punctures evident, intervals narrow, convex. Beneath evenly punctured. Length 2.25 mm.

Hab.—Canada, Eastern, Middle, and Western States.

This I am quite positive is the species described by Mr. Walsh, but the name given by him being pre-occupied, I dedicate the species to its original describer, who says he obtained the insect from galls on *Salix strobiloides*, made by a *Cecidomya*. It seems to be common, and I have obtained it from various localities, indicating that it is widely distributed. The pubescence is distinct, and gives the insect a grayish appearance, which, as well as the somewhat larger size, seems to separate it from the following species.

A. vicinum n. sp.—Black; of the same general form as the preceding, but not pubescent. Head moderately punctured; eyes distinct, but not prominent; antennae with basal joint short, and but little exceeding the second. Thorax with sides more equal, punctures less dense. Elytra as before. Beneath finely punctured. Length 2 mm.

Hab.—Col., Cal., N. Y., D. C.

Closely allied to the preceding, but yet evidently distinct from it; the lack of pubescence and smaller size will serve to distinguish the species.

A. crassinasum Lec. Pac. R. R. Expl. and Surv. Ins. 53.—Of the same general form and appearance as *A. proclive*, Lec., but has the rostrum shorter, stouter, and more distinctly dilated; the antennae are shorter and more compact; the color is brassy black, and the pubescence is not as distinct. Length 2—2.25 mm.

Hab.—Cal., D. C., Tenn., Or.

A. proclive Lec. Pac. R. R. Expl. and Surv. Ins. 53.—Black, pubescent. Head elongate, scabrous, and rugose; sulcate between the eyes; the latter are not prominent; rostrum elongate, very slightly dilated near base; antennae elongate, basal joint composing one-third of the whole member. Thorax densely punctured, with a foveate puncture near base. Elytra one-half longer than wide; striae distinct, punctures evident, intervals moderate, flat and scabrous. Beneath densely and irregularly punctured. Length 2—2.25 mm.

Hab.—Cal., Col., Ga.

Rather rare, single specimens only being found.

A. modestum n. sp.—Black, distinctly pubescent, form moderate. Head transverse, rugose, and punctured; eyes prominent, rostrum slender and equal. Thorax cylindric, widest near base, and very slightly narrower at base, apex one-third narrower than base, sides arquate; rather densely and distinctly punctured, a foveate puncture near base. Elytral striae fine, punctures scarcely evident, intervals wide, flat. Length 1 mm.

Hab.—Ariz., Kans., Fla.

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Easily known from all others in this group by its small size, uniform color, and distinct pubescence. Only a few specimens.

A. perminutum n. sp.—Black, legs pale yellow, entirely without pubescence. Head as wide as long, densely punctured, rugose between the eyes; the latter are large and distinct, but scarcely prominent; antennae piceous, rostrum piceous, slender, short. Thorax distinctly constricted at base, less so at apex, widest behind middle. Elytral striae fine, punctures small, intervals wide and slightly convex. Beneath rather finely and sparsely punctured. Length 1 mm.

Hab.—Texas, Ga., D. C., Mass.

Easily distinguished by its small size, intense black color, and red legs. It seems to be rather uncommon, only one or two specimens from any one locality being received.

Group **segnipes**, Plate III. Fig. 12.

This group contains three very closely allied species, distinct by the broad, almost square elytra, and by the very dense whitish pubescence on two of its species. They are separated as follows:

Densely pubescent.
Legs red, 2—2.5 mm..... **segnipes.**
Legs black, humeri of elytra not elevated, 2—2.5 mm..... **griseum.**
Sparsely pubescent, humeri of elytra elevated, 2—2.5 mm..... **fraternum.**

A. segnipes Say Curc. p. 6, Lec. Ed. Say Am. Ent. 1, 264; *cinereum*, Gerst. Stet. Ent. Zeit., 1854, 250.—Black, antennae except club, and legs except knees and tarsi, pale reddish; so densely clothed with white pubescence as to give the insect an ashy gray appearance. Head elongate, closely punctured, eyes not prominent; antennae moderate, basal joint one-half longer than second, and as thick; rostrum moderate and slender. Thorax much wider at base than at apex, widest just before the base, densely punctured, and with a median impressed line, distinct at base, but obsolete before the middle. Elytra but little longer than wide, sides subequal, striae narrow, punctures distinct, intervals wide, flat and scabrous. Beneath grossly and evenly punctured. Length 2—2.5 mm.

Hab.—Western and Southern States.

Varies somewhat in size, in the density of the pubescence, and in color of legs, but always easily recognizable. It is common where it occurs. Say describes it as in seeds of *Astralagus*. Riley says it is found in seeds of *Tephrosia virginica*. *Astragalus*.

A. griseum n. sp.—Black, densely pubescent. Head as in the preceding, a distinct sulcus from base to middle of rostrum; antennae rather short and heavy, thorax and elytra as in the preceding, striae distinct, punctures evident, intervals narrow, flat and finely punctured. Beneath finely and densely punctured. Length 2—2.5 mm.

Hab.—Middle, Southern and Western States.

Of the same general form and appearance as the preceding, and with similar pubescence, but at once distinct by the black legs. The insect

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is widely distributed, but does not seem to be common anywhere. Mr. Riley says that it probably bores in the stalks of potato vines.

A. fraternum n. sp.—Black, slightly aeneous, pubescence fine or entirely wanting; of the same form and general appearance as the preceding. Head transverse, eyes prominent. Thorax distinctly widest at base, else all as before. Length 2.25 mm.

Hab.—Southern and Western States.

Readily distinguished from the preceding by the almost entire lack of pubescence, and the somewhat aeneous color. Mr. Riley says it is found in *Phaseolus pauciflora*, and from the number in his collection it appears to be common.

Group **troglodytes**, Plate III, Fig. 17.

This group is closely related to the preceding, while at sight obviously distinct from it in its narrower and generally more cylindric form; each of the species has a peculiar facies, readily recognized, and while *troglodytes* enjoys a very large range of variation, there is scarcely a probability of mistaking a specimen for anything else.

The species may be separated as follows:

Densely pubescent; pubescence pale, white.
  Basal joint of antennae yellow; rostrum of ♀ often very long and slender, intervals of elytra flat, 1—1.5 mm..... **varicorne.**
  Antennae entirely black.
    Humeri distinct, elytra scarcely longer than wide, 1—1.5..... **troglodytes.**
    Humeri small, elytra much longer than wide, 2 mm..... **extensum.**
Sparsely or not at all pubescent.
  Humeri distinct, form robust.
    Color brassy, intervals of elytra wide, flat, 2 mm..... **aeneipenne.**
    Color black, intervals of elytra narrow, convex, 2 mm..... **contusum.**
  Humeri small. form more slender.
    Rostrum slender, often very elongate in ♀; intervals of elytra narrow, convex, 1.5 mm..... **tenuirostrum.**
    Rostrum unusually short and stout, 1.5 mm..... **attenuatum.**

A. varicorne n. sp.—Black, antennae piceous, basal joint yellow, densely pubescent. Head rather longer than wide, scabrous and punctured, distictly sulcate between the eyes, the latter not prominent; antennae rather short, basal joint longest. Thorax wider than long, distinctly widest at base, densely punctured, without basal fovea or impressed line. Elytra one-half longer than wide, slightly ovate, humeri not prominent, striae distinct, but rather shallow, punctures evident, intervals flat. Beneath sternum longitudinally rugose, abdomen densely punctured. Length 1—1.5 mm.

Hab.—Southern and Western States.

This species may be confounded with *tenuirostre* at first sight; the ♀ ♀ have the same long rostrum, and the form of the thorax is very much alike. The pubescence varies somewhat in density, and the elytra some-

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what in sculpture, but the yellow basal joint of the antennae is always present, and in connection with the other characters may be relied on to distinguish the species; from *troglodytes* the species is readily separated by the thorax and the antennae, though the ♂ ♂ have very much the general habitus of *troglodytes*. It does not seem to be very common.

A. troglodytes Mann. Bull. Mosc., 1843, 289; *metallicum*, Gerst. Stet. Ent. Zeit. 1854, 243.—Black, sometimes with a brassy tinge, densely pubescent, the brassy specimens sometimes less so. Head broad, eyes distinct, but hardly prominent, vertex finely punctulate and sulcate: a more distinct sulcus at base of rostrum, the latter rather short, equal and stout; antennae stout, basal joint exceeding second and third, second stoutest. Thorax transverse, widest near base, and very slightly constricted at base; evenly and rather sparsely punctured, with a short foveate line not attaining the middle. Elytra hardly one-half longer than wide; sides equal, or very slightly ovate; striae narrow, evidently punctured; interstices wide, flat and finely rugose. Length 1—1.5 mm.

Hab.—Southern and Southwestern States.

A common species, and greatly varying in size, less in form and pubescence. It has a squat, compact appearance, which is peculiar to it, and somewhat so to this group. The color is somewhat variable, and the aeneous specimens are usually least pubescent. One of these probably furnished the type of *metallicum*, Gerst.

A. extensum n. sp.—Black, densely pubescent, except feet and antennae. Of the general form of the preceding, but punctuation throughout fine and even; no thoracic line, striae fine, punctures small, intervals flat. Length 2 mm.

Hab.—Mont., Kans.

This species is rather more elongate than the preceding, but of the same general form. The lack of pubescence on the legs and antennae makes these members seem intensely black, and gives the insect a peculiar appearance. Two specimens only, received from Mr. Ulke.

A. aeneipenne n. sp.—Blackish bronze, not pubescent, form robust. Head and thorax finely and densely punctured, the latter with a foveate puncture near base, where it is also widest. Elytral striae fine, narrow; punctures small, intervals wide, flat and smooth. Beneath moderately and evenly punctured. Length 2 mm.

Hab.—D. C.

Easily distinguished by the brassy or bronze black color and robust form. Two specimens only, from Mr. Ulke.

A. contusum n. sp.—Grayish black, basal joint of antennae yellow. Head short, transverse; eyes small, not at all prominent; front longitudinally rugose, antennae long and slender, basal joint longest and very slender. Thorax moderately punctured, with a distinct fovea at base, the latter subsinnate: general form

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as in troglodytes. Elytra one-half longer than wide, sides equal, striae deep, punctures evident, intervals narrow, convex. Beneath sternum rugose, abdomen punctured. Length 2 mm.

Hab.—Dac.

A single specimen only, Coll. Ulke.

A. tenuirostrum n. sp.—Black, very sparsely or not at all pubescent. Head conic, finely punctured and scabrous; eyes small, not at all prominent; antennae moderate inserted very close to base of rostrum; basal joint scarcely equalling second and third; rostrum elongate, slender in ♀, nearly equalling the body in length, not dilated near base. Thorax wide, sides arquate, densely and grossly punctured, and with a longitudinal fovea near base. Elytra without evident humeri, very slightly ovate, nearly twice as long as wide; striae deep, punctures evident, intervals narrow and convex, though sometimes but slightly so. Beneath equally punctured. Length 1.5 mm.

Hab.—Texas, Kans., Neb., D. C.

The relationships of this species have been already mentioned in connection with those species which it resembles, and need not be again reviewed here.

A. attennatum n. sp.—Black, legs and antennae dark brown, or blackish piceous, but little pubescent. Head as long or longer than wide, densely punctured, eyes distinct, but hardly prominent; rostrum short and stout, sometimes a little dilated near base. Antennae short and stout, basal joint but little exceeding second in length, but shorter; others (except club) moniliform. Thorax cylindric, hardly wider at base, sides sub-arquate; densely punctured, without impressed line, but with a shallow, indistinct depression at base. Elytra narrow, sides parallel, striae wide, distinctly punctured, intervals convex and narrow, but little wider than striae. Beneath densely punctate. Length 1.5 mm.

Hab.—Kansas.

This species enjoys an unusual range of variation; there are but few specimens, and no two are like; the legs vary in color; the rostrum varies in length, and is sometimes distinctly dilated, and sometimes equal throughout; the head varies in width, and the eyes seem, in one instance, distinctly prominent; withal the species has a peculiar sordid appearance, and the specimens are remarkably equal in size, so that in connection with its somewhat depressed form it may be easily recognized.

Section V.

The species of this section agree in the narrowed thorax sinuate at base (Plate III, Fig. 16), and except for the first species in the robust depressed form. They are easily distinguished, though *rostrum nigrum* and *patruele* enjoy a very large range of variation, and extremes of each may, for an instant, create a doubt.

They are separated as follows:

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Elytra regularly narrow ovate, front deeply excavate between the eyes, 2—2.25 mm. **cavifrons.**

Elytra more robust, ovate, globose, or sub-equal.

Striae of elytra fine, shallow, punctures distant; distinctly pubescent, elytra nearly twice as long as wide, 2.5 mm. **confertum.**

Striae of elytra deeper, punctures more approximate, intervals moderately wide, flat.

Form robust, humeri large, sides of elytra sub-equal, not at all or very sparsely pubescent, 3—3.5 mm. **rostrum.**

Form moderate, humeri smaller, elytra more ovate, distinctly pubescent, 2—2.5 mm. **nigrum.**

Striae deep, intervals convex, punctures large and profound.

Humeri small, form moderate, intervals of elytra wider than stria, 1—5 mm. **patruele.**

Humeri large, form broad, obese, striae as wide, or wider than intervals, 2 mm. **porcatum.**

A. cavifrons Lec. Pac. R. R. Expl. and Surv. Ins. 53.—Black, basal joints of antennae yellow, very sparsely pubescent, form ovate. Head short, broad, punctured and rugose; front excavated between the eyes; rostrum short, stout and somewhat decreasing in thickness to near tip. Antennae long and slender; basal and second joints equal, and yellow. Thorax transverse, widest behind middle; base bisinuate, moderately punctate, with a distinct impressed line, foveate at base. Elytra regularly ovate, humeri indistinct; striae distinct, punctured; intervals wide, flat and finely punctured. Beneath rather sparsely punctured. Length 2—2.25 mm.

Hab.—W. T., Cal., Hudson Bay.

Rather widely distributed, but very few specimens received. The species is easily distinguished by the general form from all others in this section, agreeing almost entirely in that respect with the group *crassinasum* of section 4, and the thorax is less decidedly narrowed at base than in the others of this section. It is peculiar in having *two* joints of the antennae pale, and in the large deep excavation of front.

A. confertum n. sp.—Black, densely clothed with white pubescence; form robust, somewhat depressed. Head broad, short, coarsely punctured, longitudinally rugose; eyes large, prominent; antennae inserted close to base, short and stout; first and second joints sub-equal. Thorax transverse, densely and coarsely punctured, with a short foveate line at base. Elytra oblong, one-half longer than wide, humeri evident, distinct, sides equal; striae moderate, distinctly punctured; intervals wide, flat and finely scabrous. Beneath moderately punctate. Length 2—2.5 mm.

Hab.—Western and Southern States.

The dense pubescence and depressed elongate form distinguish this species.

A. rostrum Say, Journ. Ac. v, 253, Curc. p. 6. *Sayi* Gyll. Sch. Curc. v, 252, Harris, Inj. Ins. p. 67.—Black, sparsely or not at all pubescent. Head transverse, rugose and punctured; eyes distinct, prominent, moderate in size; rostrum slightly

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dilated near middle, a distinct deep puncture at upper side near point of dilation, and a more or less distinct sulcus from its head. Antennae moderate, basal joint twice as long as second, and with it forming two-fifths of entire member. Thorax depressed, above rugose and densely punctured; elytra very broad, but little longer than wide; humeri distinct and large, striae distinct, punctures evident, intervals wide, flat, with a row of punctures through middle. Beneath, sternum rather finely and sparsely, abdomen more densely and grossly punctured. Length 3—3.5 mm.

Hab.—U S., except Pacific States.

This is a common and well-known species; easily known by its large size and depressed form.

Said by Harris to be found in seeds of *Baptisia tinctoria*.

A. nigrum Hbst. Kaefer vii, 122, pl. 103, f. 11; Germ. Mag. ii, 239; Gyll. Sch. Curc. vi, 254.—Black, usually distinctly pubescent. Head much as in the preceding except for the sculpture of rostrum. Antennae basal joint but little exceeding second, and combined with it not equalling one-third of the entire member. Thorax as in *rostrum*; elytra of the same general form, humeri smaller, proportionately rather longer; striae and intervals as in the preceding.
Length 2—2.5 mm.

Hab.—U. S., except Pacific States.

This species varies considerably in size, density of pubescence, form of rostrum, which is sometimes dilated and sometimes not; form of elytra, which are sometimes more ovate, and size of head, which is occasionally less transverse; in general appearance very similar to the preceding; it is at once distinguished by its smaller size, more evident pubescence and more elongate form. This is probably the species mentioned by Harris (*Ins. Inj. to Veg. Flint's Ed.*, p. 67) as feeding in the seeds of Locust, and specimens in Dr. Horn's collection are marked "On Locust, Adirondacks."

A. patruele n. sp.—Black, not pubescent, form broadly ovate. Head transverse, scabrous and punctured; eyes somewhat prominent. Thorax densely and grossly punctured with a linear dorsal depression, becoming punctiform or foveate at base. Elytra ovate, striae and intervals as in the synopsis. Length 1.5 mm.

Hab.—U. S.

Easily distinguished by the characters mentioned in the synopsis, *porcatum*, with which it agrees in most structural details, being much more obese, and somewhat larger.

A. porcatum Boh. Sch. Curc. v, 374.—Black, not pubescent, form very robust, sub-depressed. Head broad, rather sparsely punctured; eyes but little prominent; antennae moderate, basal joint longest, second stoutest, together forming one-third in length of the antennae. Thorax rather sparsely punctured with a deep foveate line near base. Elytra comparatively very large, but little longer than wide, humeri large, distinct; striae deep, punctures evident, intervals narrow, convex, not wider than striae. Length 2 mm.

Hab.—Neb., Pa., N. Y.

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Not common, and distinguished by the almost rounded elytra, and very obese appearance.

PODAPION Riley.

This genus contains only a single species, larger and more elongate in form than the species of *Apion*, at first sight recalling *Magdalis*, but with the family characters of the *Apioninae;* the figure (Plate III, Fig. 2) gives the superficial appearance.

The species is:

P. gallicola Riley, Bul. Bkln. Ent. Soc. 6, p. 37.—Black, antennae piceous, clothed with long white pubescence. Head broad, rugose, punctate and very slightly excavate between the eyes, which are large and prominent; rostrum rather long, slender, equal throughout, very abruptly joining the head; antennae inserted very close to base of rostrum; basal joint long, slender and rather abruptly clavate. Thorax cylindric, widest at middle, narrowest at apex, scabrous and very finely and densely punctate; no basal line or punctation; legs with the anterior femora strongly swollen. Elytra elongate, sides even, parallel; striae wide. with an apparently double row of irregular, but closely set punctures; intervals narrow. Beneath scabrous and finely punctate. Length 3—4.5 mm.

Hab.—D. C., Mich., Mass.

This species, Prof. Riley says, is a true gall maker on *Pinus inops*. The gall is spherical or ovoid, rarely elongate, and from one-quarter to three-quarters inch in length, smoother than the unaffected parts of the twig, but concolorous; the interior is hard, woody, usually containing an abundance of liquid resin. The imago appears in May or June, and probably oviposits in the one year old twigs; no twigs appear until the next season, when the larva and pupa of the insect may be found.

The following species I have not succeeded in positively identifying:

A. nodirostre Gerst. Stet. Ent. Zeit., 1854, 261.—Oblong, black, sub-aeneous, slightly pubescent; rostrum dilated near middle, above canaliculate, front tri-sulcate; antennae short at base, stout. Head grossly punctured; thorax sub-cylindric, narrowed anteriorly, finely punctured; as long as broad, sides equal; elytra black, aeneous, striate and punctured; interstices sub-convex and shining; humeri prominent, legs piceous. Length 1—1¼ lines.

Hab.—Fla.

A. vile Gerst. loc. cit. 249.—Elongate, black, not pubescent, shining; rostrum elongate, slightly arquate, densely punctate at base; antennae inserted close to the eyes, base piceous. Head finely granulate, sulcate between eyes; eyes small, not prominent; thorax nearly as wide as long; sides parallel, slightly narrower at apex, base bisinuate; sparsely punctate, foveate at base; elytra elongate, ovate; at base one-half broader than thorax; sides parallel to terminal third; striae punctate, intervals convex, finely scabrous; legs black, thin; anterior tibia elongated. Length ⅔ lines.

Hab.—Baltimore.

Evidently belongs to the second section, and must be allied to *atripes*.

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A. cuprascens Mann. Bull. Mosc., 1843, 289.—Oblongum, fusco aeneum, griseo pubescens, rostro longitudine thoracis cum capite, arcuato, thorace anterius augustato, profunde punctato, postice canaliculato; elytris oblongo ovatis, punctato sulcatis, punctis in sulcis satis approximatis. Longit. cum rostro 1½ lines Latit. ½ lin.

Hab.—In insula Sitkha.

I have seen no species to which this description applied.

A. reconditum Gyll. Sch. Curc. v, 432.—Oblongo ovatum, nigro aeneum, subnitidum glabrum; thorace sub-conico, obsolete punctato, non-canaliculato; elytris amplis, remote punctato sulcatis; interstitiis planis, sublaevibus; rostro tenui arcuato.

Rostrum longius magis tenue, arcuato-caput breve, latum, atrum, fronte impressa punctulata, vertice elevato sublaevi; oculi semi-globosi, nigri; rostrum longitudine capite cum thoracis tenue, cylindricum, atrum nitidum. Antennae mediocres, nigrae. Thorax latitudine baseos fere longior, anterius angustior, sub-conicus, apice truncatus lateribus obliquus vix ampliatus; basi leviter bisinuatus, supra modice convexus, obsolete punctatus, postice non canaliculatus nigro aeneus, subnitidus; scutellum tuberculiforme, atrum. Elytra ampla, antice thoracis basi fere duplo latiore, humeris rotundatis, calloso elevato instructis; lateribus pone medium adhuc nonnihil latioribus, apice conjunctim rotundato, thorace triplo longiora, supra convexa sat profunde sulcata, sulcis remote punctatis, interstitiis planis, sublaevibus, nigro aenea, nitida glabra. Corpus subtus confertim punctatis, atrum, parum nitidum. Pedes longiusculi, validi, atri, tarsis cinereo pubescentibus. Longit ?

Hab.—Pa.

LIST OF SPECIES.

APION Herbst.

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1.	**A. erraticum** Smith, n. sp.	Ia., Tex.
2.	**A. obsoletum** Smith, n. sp.	Can., Mich., Dac.
3.	**A. erythrocerum** Smith, n. sp.	D. C., Tenn., Miss., Kans.
4.	**A. robustum** Smith, n. sp.	Mo., Ia., Tex.

♂♂

5.	**A. protensum** Lec.	Cal.
6.	**A. nasum** Smith, n. sp.	Wy., Dac., Cal.
7.	**A. parallelum** Smith, n. sp.	D. C., Tenn.
8.	**A. estriatum** Smith, n. sp.	Can., Col., Tex.
9.	**A. ovale** Smith, n. sp.	Mo., Cal.
10.	**A. impunctistriatum** Smith, n. sp.	D. C., Tex.
11.	**A. desolatum** Smith, n. sp.	Ga.
12.	**A. sordidum** Smith, n. sp.	W. T.
13.	**A. floridanum** Smith, n. sp.	D. C., Fla., Ia., Col., Ariz.
14.	**A. obesum** Smith, n. sp.	Mich., Tex.
15.	**A. parvulum** Smith, n. sp.	M. States.
16.	**A. atripes** Smith, n. sp.	Ga., Fla., Cal.
17.	**A. cribricolle** Lec., *A. poronicolle* Germ.	Fla., Cal., Tex., Neb., Ariz., N. S.
18.	**A. melanarium** Gerst.	Tex., Ariz., Vanc.

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19. **A. minutum** Smith, n. sp. — N. Y., Fla.
20. **A. pensylvanicum** Boh. — Cal., Ariz.
21. **A. opacicolle** Smith, n. sp. — Ariz., Cal., Or.
22. **A. cedorhynchum** Lec. — Ariz., Cal.
23. **A. texanum** Smith, n. sp. — Tex.
24. **A. ellipticum** Smith, n. sp. — La., Neb.

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25. **A. californicum** Smith, n. sp. — Cal.
26. **A. decoloratum** Smith, n. sp. — Md., Va., D. C., N. C., Ariz.
27. **A. concoloratum** Smith, n. sp. — W. Va., Ga., Fla., Mich., Cal.
28. **A. carinatum** Smith, n. sp. — Fla., Tex.
29. **A. brevicolle** Smith, n. sp. — Cal., Ariz., Tex.
30. **A. typicum** Smith, n. sp. — Cal.
31. **A. abdominale** Smith, n. sp. — D. C., Ill., Ariz.
32. **A. antennatum** Smith, n. sp. — Cal., Ariz.
33. **A. cordatum** Smith, n. sp. — Cal.
34. **A. capitatum** Smith, n. sp. — Mich., Neb., Or.
35. **A. oblitum** Smith, n. sp. — Fla., Tex., Kans., Col., Cal.

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36. **A. ventricosum** Lec. — Mass., Tex., Ariz., Cal.
37. **A. subglobosum** Gerst. — Fla.
38. **A. turbulentum** Smith, n. sp. — Pa., N. Y., N. J., D. C., Tex., Cal.
39. **A. minor** Smith, n. sp. — La., Cal.

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40. **A. dilatatum** Smith, n. sp. — Ariz.
41. **A. herculanum** Smith, n. sp. — Mass., Penn., N. Y., D. C.
42. **A. pyriforme** Smith, n. sp. — Ariz.

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43. **A. walshii** Smith, n. sp. — Mass., N. Y., Mich., Ill., Can., Col., Ariz., Cal.
lanuginosum Walsh.
44. **A. vicinum** Smith, n. sp. — N. Y., D. C., Col., Cal.
45. **A. crassinasum** Lec. — D. C., Tenn., Or., Cal.
46. **A. proclive** Lec. — Ga., Col., Cal.
47. **A. modestum** Smith, n. sp. — Fla., Kans., Ariz.
48. **A. perminutum** Smith, n. sp. — Mass., D. C., Ga., Tex.

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49. **A. segnipes** Say. — D. C., Ga., Fla., Mo., Mont., Tex., Ariz.
cinereum Gerst.
50. **A. griseum** Smith, n. sp. — N. J., D. C., Fla., Kans., Ariz., Dac., Col., Tex.
51. **A. fraternum** Smith, n. sp. — D. C., Ga., La., Tex., Ill., Mo., Kans., Cal.

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52. **A. varicorne** Smith, n. sp. — Fla., Ga., Tex., Col., Ariz., Dac., Cal.
53. **A. troglodytes** Mann. — S. C., Fla., La., Mo., Tex., Ariz., Cal.
metallicum Gerst.
54. **A. extensum** Smith, n. sp. — Mont., Kans.
55. **A. aeneipenne** Smith, n. sp. — D. C.
56. **A. contusum** Smith, n. sp. — Dac.
57. **A. tenuirostrum** Smith, n. sp. — D. C., Kans., Neb., Tex.
58. **A. attenuatum** Smith, n. sp. — Kans.

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59. **A. cavifrons** Lec. W. T., Cal., H. B.
60. **A. confertum** Smith, n. sp. Ga., Mich., Kans., Cal., Col., W. T., U. T.
61. **A. rostrum** Say. Pa., N. Y., D. C., Md., Ga., Mo., Mont., Tex.
Sayi Sch.
62. **A. nigrum** Hbst. Pa., N. Y., Md., D. C., H. B., Kans., Col.
63. **A. patruele** Smith, n. sp. N. Y., Fla., Mich., Ill., Col.
64. **A. porcatum** Boh. Pa., N. Y., Neb.

PODAPION Riley.

65. **A. gallicola** Riley, Bull. Brook. Ent. Soc., vol. vi, p. 37. D. C., Fla., H. B., Ark.

Undetermined species.

66. **A. cuprascens** Mann. Sitkha.
67. **A. nodirostre** Gerst. Florida.
68. **A. reconditum** Gyll. Pa.
69. **A. vile** Gerst. Baltimore.

EXPLANATION OF PLATE III.

1.—*Apion* general form of ♀♀ one and two.
2.—*Podapion gallicola* Riley.
3.—*Apion herculanum* side view of group *pyriforme*.
4.—Side view of group *crassinasum*.
5.—Tarsus of *Podapion*.
6.—Tarsus of *Apion*.
7.—Eyes not all prominent, head elongate, rostrum slender, slightly dilated toward tip.
8.—Head transverse, eyes moderately prominent, rostrum dilated near base and tapering to tip.
9.—Group *ventricosum* (*subglobosum*).
10.—*A. atripes*.
11.—*A. patruele*.
12.—Group *seguipes*.
13.—Group *crassinasum* (*Walshii*).
14.—*A. proclive*.
15.—*A. parallelum*.
16.—*A. rostrum*.
17.—Group *troglodytes*.
18.—Group *pyriforme* (*dilatatum*).
19.—Femur slender.
20.—Femur strongly clavate, tuberculate at inner side.
21.—Femur clavate.
22.—Claw of tarsus toothed.
23.—Claw of tarsus simple.
24.—Antenna normal.
25.—Antenna with second joint subglobose.

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Revision of the CUCUJIDAE of America North of Mexico.

By Thos. L. Casey, Lieut. of Eng'rs., U. S. A.

Introductory Note.

The following revision has occupied all the time which I could conveniently spare from my professional duties for the past four months, and has involved more labor than I anticipated. My design was to give descriptions and figures,—drawn as carefully as possible from the insects themselves,—of every species known to our fauna, not only in order to facilitate the identification of cabinet specimens, but to show as plainly as possible the wonderful and very varied structures to be met with in this group of genera. I trust that my objects have been accomplished with at least partial success.

The descriptions of genera have for the greater part been drawn from Lacordaire's Genera des Coléoptères, with such additions and adaptations as were found necessary for our species. The general scope of the family is that given in the classification of the Col. of N. A. by Drs. LeConte and Horn. The synonymy of *Hemipeplus* has been drawn from Dr. Horn's paper on that subject. The position of the genus *Narthecius* at the head of the Cucujinae was first proposed by Mr. Crotch in some unpublished manuscript notes; the same distinguished entomologist also recommends the fusion of *Silvanus* and *Nausibius*, but I think unnecessarily.

I have to give my most sincere thanks to Drs. LeConte and Horn, as well as to Mr. E. A. Schwarz for the unlimited use of their cabinets and libraries.

As is well known it has long been a disputed question whether the Silvaninae properly form a part of the Cucujidae or Cryptophagidae, but as the group possesses characters common to both and, as it were, forms a connecting link between them, it is a matter of very little importance to which family we attach it. The differential characters, however, do not appear to me to be sufficiently important to warrant us in considering them a distinct family.

As at present organized, therefore, we have the following general characters:

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Mentum small, slightly rounded in front, usually transverse, and very short.

Ligula corneous or coriaceous, of variable form, prominent. Palpi short three-jointed. Maxillae bilobed; palpi rather short, four-jointed.

Antennae eleven-jointed, inserted on, or slightly under, the lateral anterior angles of the head, filiform or terminated by a slight club, the first joint usually elongated, sometimes to a great degree.

Eyes usually small, though in a few instances very large.

Head large, usually joined closely to the prothorax, but sometimes, as in *Cucujus*, connected thereto by a very distinct neck.

Prothorax with side pieces and upper piece not separated. Pronotum generally not contiguous with base of elytra, and frequently having two lateral longitudinal lines, which are the lines of intersection of the lateral and superior surfaces.

Anterior coxal cavities in some sub-families closed, in others open behind, separated by the prosternum.

Mesosternum moderate, sometimes the portion between the middle coxae is quite broad, and sub-quadrate. The epimera reach the coxae.

Metasternum large and quadrate, episterna long, narrow and covered.

Elytra more or less rounded behind; flat, sometimes strongly margined, but in others not at all so, covering the entire abdomen except in a few cases. Scutellum small.

Abdomen with five free ventral segments.

Anterior coxae variable in size and sometimes closely approximate—*Hemipeplus*—globular or sub-conical. Middle coxae not prominent, subtriangular. Posterior coxae transverse, nearly contiguous.

Legs rather short, femora large, tibiae slender, terminated by two spurs. Tarsi very variable, sometimes heteromerous in the males, and pentamerous in the females, usually with the first joint small, and pentamerous in both sexes.

The family is composed of a comparatively large number of genera, which, as may be seen from the above analysis, are very heterogeneous in many respects, but which preserve in common, except in *Silvanus*, a certain general *facies*. The species are generally flat and elongated; sometimes excessively so, and of a sombre tint. They are found generally under bark, and are usually moderate in their movements, although *Telephanus velox* runs with the most remarkable swiftness.

Employing the table in the above mentioned work, we have the following five sub-families:

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Anterior coxal cavities closed behind; tarsi not lobed beneath, with the fourth joint small ..... I. SILVANINAE.
Anterior coxal cavities open behind; maxillae covered by corneous plates. II. PASSANDRINAE.
Maxillae exposed..... III. CUCUJINAE.
Anterior coxal cavities closed behind; tarsi with the third joint lobed.
Fourth tarsal joint not smaller than the third..... IV. HEMIPEPLINAE.
Fourth tarsal joint very small..... V. TELEPHANINAE.

Sub-family I.—SILVANINAE.

Tarsi pentamerous in both sexes. Fourth joint very small. Maxillae exposed. Ligula entire, or slightly emarginated, rarely bilobed. Antennae terminated by a small, but distinct, club.

Two genera are indicated as follows:

Club of antennae formed by abrupt enlargement of last three joints. **Silvanus.**
Club of antennae formed by gradual enlargement of joints..... **Nausibius.**

SILVANUS Latr.

Body more or less elongated, somewhat depressed. Labrum short. Mandibles short, and provided with a densely ciliated membrane. Last joint of palpi gradually attenuated, or obconical, and truncated slightly at the extremity. Head sub-quadrate. Eyes small, rounded and coarsely granulated. Antennae, with joints one and two, larger; three to seven smaller, sub-equal; eight, smallest; nine to eleven, forming a loose club. Elytra elongated; sides parallel, or slightly convex, not margined. Tarsi with first joint large; fourth very small. Elytra covering entire abdomen, punctato-striate.

The species of this genus are small, found under bark, or in articles of commerce, and many of them are cosmopolitan. All are punctured; the punctures on the elytra are circular impressions of rather larger size, and are arranged in rows, so as to present, under low magnifying power, the appearance of striae. There are in addition to these rows of punctures, regular lines of setae, which, in general, are short, recumbent and bristle-like, but which in some cases become so long and slender as to constitute pubescence as in *S. rectus*.

The following arrangement may be adopted at present, there being two very distinct divisions:

A.—Lateral edges of prothorax strongly and acutely dentate.
Genae large and distinct..... 1. **surinamensis.**
B.—Lateral edges of prothorax not dentate, finely granulate: genae very small, or invisible.
Prothorax as long, or longer than broad; sides more or less sinuate.
Prothorax strongly narrowed behind.

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Body strongly punctured.....2 **bidentatus.**
Body less densely punctured.....3. **planatus.**
Prothorax sub-quadrate; very feebly narrowed behind.
Sides nearly straight.
Body densely punctured.....4. **imbellis.**
Body very feebly punctured.....5. **quadricollis.**
Sides strongly bi-sinuate, teeth very prominent.....6. **gilæ.**
Prothorax broader than long. Small species.
Small, but distinct tooth at anterior angles of prothorax.....7. **advena.**
Anterior angles of prothorax not toothed.....8. **rectus.**
Anterior angles of prothorax indistinctly toothed, body more depressed; densely and coarsely punctured.....8. **opaculus.**

1. **S. surinamensis** (Linn.)—Elongated, body dark brownish castaneous, clothed with light setaceous pubescence. Prothorax with two lateral lines and one median, of closer pubescence; sides evenly arcuate, and provided with six teeth, separated by deep and always well-marked excavations. Antennae slightly exceeding the prothorax in length. Length 2.5 mm.

Cosmopolitan. Plate IV, Fig. 1.

An exceedingly well-marked species; carried by commerce all over the globe.

2. **S. bidentatus** (Fabr.)—Elongated, body ferruginous, very opaque, and densely punctured. Anterior angles of prothorax sharply toothed. Length 2.7 mm.

Cosmopolitan. Plate IV, Fig. 2.

Distinguished by length of thorax, and the well-defined teeth at the anterior angles of same, as also by the peculiar opacity of body.

3. **S. planatus** Germ.—Body densely though rather lightly punctured, castaneous. Elytra less densely punctured, and sparsely pubescent. Anterior half of sides of prothorax parallel, then more rapidly converging. Length 2.0—2.7 mm.

This species may be distinguished from the preceding by its partly shining surface, that of the former being of perfect opacity, without a trace of lustre. The prothorax is much wider, with more imperfectly developed teeth, and with the sides much less sinuous. Less punctured, slightly smaller, and lighter colored specimens of this species from the Pacific Slope were named *S. nitidulus*, by Dr. LeConte, but I hardly think there is a doubt as to their identity with *planatus*. Locality in the present family seems to be of very little consequence.

4. **S. imbellis** Lec.—Elongated, body deeply and densely punctured; prothorax almost exactly quadrate; surface without lustre. Prothoracic teeth very slightly developed. Length 2.6 mm.

Pa., Mo., Cal. Plate IV, Fig. 4.

This is a very distinct species.

5. **S. quadricollis** Guér.—Elongated, body very light castaneous, integuments very transparent. Surface sparsely and lightly punctured, shining. Pro-

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thorax much longer than broad, sides nearly straight, and slightly converging posteriorly. Last two joints of antennae anchylosed. Length 2.4—3.0 mm.

N. Y., Fla., Ga. Plate IV, Fig. 5.

May be distinguished by its generally large size and shining surface, as well by its light color.

The prothorax of this species is usually slightly elongated; specimens, however, are often seen in which it is almost exactly quadrate; to consider it, therefore, as generally sub-quadrate, as has been done in the table, would seem to be as good a course out of the dilemma as is available, when we take the structure of this part as the basis of classification. I am unable to state whether this variability of thoracic form is due to sex or to accidental circumstances.

6. **S. gilae** n. sp.—Form moderately robust, depressed; sides parallel; pubescence very short, recumbent, setiform and arranged in very closely approximate rows upon the elytra. Head sub-quadrate; sides nearly parallel behind, rapidly convergent before the bases of the antennae; surface nearly flat and finely rugulose; eyes very small; genae acute. Antennae somewhat shorter than head and prothorax together; first three joints equal in length; first slightly more robust; sixth and eighth smallest, equal in thickness, and much smaller than the seventh; joints of club but slightly thicker than the first, equal in width, last joint nearly globular. Prothorax somewhat longer than wide; nearly flat in the middle, inclined at the sides, wider than head anteriorly; sides notably bisinuate, portion between the sinuations strongly arcuate, and minutely granulate; anterior teeth strongly developed, posterior much smaller and distinct; posterior margin in the form of a very broad triangle; surface finely and transversely rugulose. Elytra equal in width to prothorax, togther evenly rounded behind, somewhat more than twice as long as wide, and two and one-half times as long as the pronotum; sides parallel and very slightly arcuate; borders very narrow and distinct, not becoming narrower posteriorly; surface more convex posteriorly; minutely, and somewhat obscurely punctato-striate; scutellum excessively short and transverse. Legs very short, femora robust, tibiae curvate; first two joints of tarsi robust, remainder slender, last joint much elongated. Color throughout rufo-testaceous. Length 2.9—3.5 mm.

Arizona (Morrison).

Received too late for figuring. The species seems, however, to be very distinct.

The species considered thus far are quite elongated; the three following are much shorter, although nearly of the same width.

7. **S. advena** (Waltl.)—Rather light brownish castaneous, convex; prothorax quadrate, broader than long; sides arcuate; anterior angles with minute blunt teeth, which are followed immediately by slight emarginations. Surface lightly punctured, and sparingly pubescent; pubescence rather long. Length 1.9 mm.

Cosmopolitan. Plate IV, Fig. 6.

This species is so common as to require no further comment.

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8. **S. rectus** Lec.—Color same as preceding; prothorax quadrate, broader than long; sides nearly straight; anterior angles not toothed. Surface rather deeply punctured, and covered with long setaceous pubescence. Length 2.0 mm.

Pa., S. C., Fla., Ariz. Plate IV, Fig. 7.

Resembles *advena* somewhat in general appearance; it is, however, less convex.

9. **S. opaculus** Lec.—Light ferruginous, body depressed, densely and coarsely punctured; setiform, very opaque; opacity resembling that of bidentatus; prothorax quadrate; length and breadth equal; sides nearly straight, and teeth not developed. Length 1.8 mm.

Cal. Plate IV, Fig. 8.

A very distinct species; it does not appear to be very common.

NAUSIBIUS Redt.

This genus may be distinguished from the preceding by the antennae, which enlarge gradually to a club. The body is elongate, very depressed, broader, as a rule, than in *Silvanus*.

Mentum deeply emarginate; ligula broadly, but not deeply emarginate, and slightly enlarged anteriorly. Elytra covering the entire abdomen, punctato-striate and costate. First joint of tarsi much longer than second, fourth very much smaller; under surface ciliated; inner lobe of maxillae terminated by a well-marked bifid hook.

Two species are known in our fauna, which may be distinguished as follows:

Antennae placed on anterior angles of head; first joint entirely visible. 1. **dentatus.**

Antennae placed under anterior angles of head; first joint almost entirely concealed from above..... 2. **repandus.**

1. **N. dentatus** (Marsh).—Deep blackish brown; body deeply and densely punctured; integuments opaque. Antennae placed on anterior angles of head in front of eyes; robust and rather short; prothorax quadrate; sides undulated, teeth six. Eyes placed at posterior angles of head; moderate, coarsely granulated. Length 3.5—5.0 mm.

Cosmopolitan. Plate IV, Fig. 9.

Distributed by commerce over the entire globe.

2. **N. repandus** Lec.—Same color as preceding; body less strongly punctured; somewhat shining, opaque, smaller and proportionally narrower; prothorax slightly narrowed behind; longer than broad; sides straight, and slightly serrulate. Antennae placed slightly under anterior angles of head. Eyes small, coarsely granulated, and placed on posterior angles of head. Length 2.8—3.2 mm.

D. C., Fla. Plate IV, Fig. 10.

Appears to be quite rare in collections. In a series which I have had an opportunity for examining in the cabinet of Mr. Ulke, the prothorax,

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in many instances, seems to be quadrate, thus approaching *dentatus*. However, many other characters, not possessed in common, lead me to believe that the two species are distinct.

In Crotch's check list there is a variety of *N. dentatus* given as *N. major*. I have had an opportunity for examining this also, and find that it is simply *N. dentatus*, without any difference at all, as far as I can discover.

Sub-family II.—PASSANDRINAE.

Maxillae concealed by corneous plates, which project from the lateral borders of the buccal opening. Mentum very short, linear; ligula corneous. Elytra covering the entire abdomen. Anterior and middle coxae globular. Anterior coxal cavities open behind. Tarsi pentamerous in both sexes, first joint often very short. Body elongated, depressed, or sub-cylindrical. Antennae filiform, last joint compressed, and often carinated; extremities of mandibles simple. Head quadrate; eyes moderate, coarsely granulated.

The singular insects which constitute this sub-family are found under bark, and are, in general, much larger than those of the one last described. The various genera are quite heterogeneous in general appearance, and may be analyzed as follows:

Jugular plates more or less broad and flattened.
First joint of tarsi very short.....**Catogenus.**
First joint of tarsi of normal length.....**Scalidia.**
Jugular plates long and acute.....**Prostomis.**

CATOGENUS Westw.

Antennae robust, joints one to ten nearly globular, first largest, second smallest; last joint compressed, and carinate along the vertex. Mesosternum flat between the middle coxae. Body elongated and quite depressed.

We have in our fauna but one species.

1. **C. rufus** (Fabr.).—Dark castaneous. Elytra deeply and closely striate. Prothorax punctured quite uniformly with the exception of a median line, which is free from punctures. Antennae inserted in the anterior portion of grooves in the side of the head, in the posterior portions of which the eyes are situated; ciliated on the sides which would naturally be brought into mutual contact. Eyes almost invisible from above, more salient from below. Length 3.8—13.0 mm.

Pa., D. C., Dac., Ariz., Neb. Plate V, Fig. 2.

This species, which is common and widely distributed, is very variable in size. The jugular plates are large, and their borders are suddenly thickened into a sort of lip.

SCALIDIA Erichs.

Head sub-oval and obtuse, not contracted behind. Epistoma emarginate in the middle. Eyes oval, small, coarsely granulated. Last joint of antennae not larger

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than the others, strongly carinated, last four joints compressed successively to a greater degree. Joints of tarsi decreasing gradually in size.

But one species has been discovered thus far in our territory.

1. **S. linearis** Lec.—Color paler than that of the preceding species, body less depressed, sub-cylindrical. Head sub-quadrate with a deeply excavated median furrow extending from the front nearly to the posterior margin. Two small lateral furrows originating at the front, extend back a short distance, diverging slightly from the median line. Elytra deeply striate, with rows of very minute punctures in addition. Prothorax punctured except on a narrow median line. Head punctured and margined with an elevated border. Length 6.5 mm.

Texas. Plate IV. Fig. 11.

Quite rare in collections.

PROSTOMIS Latr.

Jugular pieces long and very acute, curving outward at their extremities. Mentum broadly emarginate in front. Ligula elongated and entire. Mandibles nearly as long as the head, very broad and robust, denticulated internally. Antennae about as long as the head and mandibles together; first joint large, second smaller, sub-cylindrical; third elongated; fourth to eighth globular; three last enlarged, forming a loose club, which is herissate with long hairs. Eyes small, salient. prothorax sub-quadrate, very lightly and sparsely punctured. Elytra narrowing slightly posteriorly, striated with rows of foveate punctures, shining. First joint of tarsi very small, next three almost equal in size; fifth very long.

The only species known to us is the following:

1. **P. americana** Cr.—Light castaneous; body depressed, elongated, broadest across the eyes. Elytra glabrous. Length 4.8—6.0 mm.

Or., Nev., Cal. Plate IV, Fig. 12.

Differs from the European *mandibularis* in the following particulars:

The mandibles are much longer, and the antennae are less robust than in that species; the color of our species is deeper, and the prothorax has a well-marked median furrow which does not appear—from the single specimen which I have had under examination—to be developed in the first. But it is in the jugular pieces that the greatest difference exists, those of our species being very long, slender, and attaining the tips of the mandibles, while in the European species these plates do not approach the tips within one-fourth of their length.

However, with all these differences, which must be admitted to be of minor value, I can only regard *americana* as a variety of *mandibularis*. If the genus contained a large number of species, the above differences might be regarded as specific, but in the present case there is but one form known, and as the two races resemble each other so closely we are warranted in assuming that these differences are only those due to local influence.

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As to the tarsi of this genus, some difference of opinion has been expressed, Erichson maintaining a five-jointed tarsus with the first joint small. Duval dissected the tarsus and found four joints only, with the first joint bilobed. On Plate IV will be found a representation of the middle tarsus of our species as it appears to the writer under a power of about fifty diameters; and I am inclined to agree with Erichson and Lacordaire as to its five-jointed nature, both from analogy and appearance.

Sub-family III.—CUCUJINAE.

The chief point of distinction between this sub-family and the preceding, is the absence of the corneous plates concealing the maxillae, these being replaced by small projections not separated from the other portions of the under surface by a suture. Two tribes are indicated in our fauna as follows:

First joint of antennae usually moderate; hind tarsi of ♂ four-jointed. I. CUCUJINI.

First joint of antennae greatly elongated; tarsi all five-jointed.....II. BRONTINI.

Tribe I.—CUCUJINI.

The table of genera given in the Class. of the Col. of N. A. cited above seems to meet most requirements, and I simply transfer it with the following modifications: *Narthecius* apparently having the greatest affinity with the Passandrinae is placed first, and the striation of the prothorax given as the distinguishing feature between it and *Pediacus* instead of the position of the eyes. *Parandrita* is merged with *Læmophlœus*, and one new genus is added Thus changed the table stands as follows:

Prosternum narrow.....2.
Prosternum wide; body depressed.....4.
2.—Hind angles of head prominent.....3.
Hind angles of head not prominent.
Body cylindrical; prothorax margined.....**Narthecius.**
Body depressed; prothorax not margined.....**Pediacus.**
3.—Antennae not thicker toward the tip.....**Cucujus.**
4.—Elytra very short; prothorax not margined.....**Ino.**
Elytra long; prothorax margined.....5.
Spurs of front tibiae unequal.....**Læmophlœus.**
Spurs of front tibiae equal.....**Lathropus.**
5.—Second joint of antennae attached to the side of the first joint which is of abnormal form.....**Dysmerus.**

In *Læmophlœus* and *Lathropus* the striae on the prothorax are constant in every species and individual which I have examined, and therefore the ground for the separation of *L. angustulus* given by Dr. LeConte in his Classification will not hold good, the position of the eyes being plainly of no value.

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NARTHECIUS Lec.

Mandibles bidentate at the tip; ninth and tenth joints of antennae flattened; eleventh elongated, not flattened, fusiform and acuminate at tip; second joint of labial palpi enlarged and compressed; third joint elongated and fusiform. Last joint of maxillary palpi elongated, slightly bent and prolonged in a narrow subcylindrical process. Eyes on side of head, very flat and nearly circular; side processes on under surface of head, resembling the jugular pieces of the Passandrinae, feebly developed.

We have but one species.

1. **N. grandiceps** Lec.—Body elongated, cylindrical, deep blackish castaneous. Head slightly larger than the prothorax which is plainly margined; punctuation fine; middle of front projected forward into a short horn-like process; upper surface provided with two lateral elevated ridges and one median furrow, none of which attain the posterior margin; there are also two small but very distinct anterior, lateral ridges which converge toward the horn-like process. Mandibles very large, evenly arcuate, and dentate internally. Eyes small, flat and more visible from above than below, rather finely granulated. Antennae slightly longer than head, enlarged toward the tip. Prothorax narrower posteriorly; sides nearly continuous with those of head, punctures finer and closer than on head; anterior angles not pronounced; posterior angles acute. Elytra entire, a little longer than the head and prothorax together, and almost imperceptibly wider than the latter; sides parallel; evenly rounded behind; not punctured, but having faint longitudinal ridges. Scutellum evenly rounded behind. Fifth joint of tarsi ornamented with ridges or striae.

Plate IV, Fig. 13, and Plate V, Fig. 1.

This curious species is of such excessive rarity that as far as my knowledge extends, only three specimens are known in the collections of the United States; one a mutilated male in the cabinet of Dr. LeConte from Pennsylvania, another in a private collection in Cincinnati, and the third, a perfect specimen in that of Dr. Horn. The descriptions and figures have been taken from the latter, which was obtained in Nevada.

PEDIACUS Schuck.

Mentum short, strongly emarginate, with the interior angles acute. Ligula bilobed anteriorly. Inner lobe of maxilla ciliated at its extremity. Last joint of maxillary palpi acuminate, that of the labial palpi oval. Labrum rounded in front. Head triangular, joined to prothorax by a short and very broad neck. Eyes moderate in size and very convex, situated at the posterior angles of the head. Antennae short and robust; last three joints suddenly enlarged, forming a loose club. Prothorax sub-quadrate, not margined; sides serrulate, or undulated. Elytra depressed, covering entire abdomen, and evenly rounded behind. Tarsi heteromerous in the male, and pentamerous in the female; first joint very small. Body elongated and very depressed.

Our species are two in number, and may be distinguished as follows:

Sides of prothorax arcuate and feebly undulated; punctuation extremely dense. 1. **fuscus.**

Sides of prothorax nearly straight, and acutely, though rather feebly serrulate. 2. **depressus.**

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1. **P. fuscus** Er.—Body depressed, moderately elongated, and of a uniform deep reddish brown. Surface densely punctured, not shining, and not pubescent; sides parallel. Elytra about twice the length of the head and prothorax together, strongly margined internally, but very feebly so or not at all externally. Eyes very convex and prominent. Antennae rather shorter than the head and prothorax together. Length 3.0—4.0. mm.

Plate V, Fig. 5.

A common European species, which is undoubtedly cosmopolitan. It is the same as *planus* Lec., and *subcarinatus* Mann.

2. **P. depressus** Herbst.—Body strongly punctured; sides parallel; ferruginous. Surface somewhat shining. Eyes convex. Antennae in length about equal to width of prothorax, club well developed. Elytra covering entire abdomen, depressed, rather more than twice the length of the head and prothorax together, and margined internally; sides parallel. Length 2.8—4.4 mm.

Plate V, Fig. 4.

Var. *subglaber* Lec.—The same description will apply to this variety with the following exceptions:

The head is less densely punctured posteriorly, and not punctured at all in front of the line joining the bases of the antennae. The club of the antennae is stronger, and the color of the body, which is smaller, is paler. Length 3.3 mm.

Plate V, Fig. 6.

Depressus is a common cosmopolitan species, and after long deliberation I have determined to unite Dr LeConte's *subglaber* to it as a variety. The punctuation is very different, and the latter seems proportionally broader in form, with many minor differences, but until other specimens are discovered we must leave it as above. Attention should be called to the curious malformation of the left antenna of Dr. LeConte's type of *subglaber* as exhibited in the figure.

CUCUJUS Fabr.

Mentum transverse and broadly emarginate; anterior angles acute. Ligula bilobed. Lobes of the maxillae ciliated at the extremity. Last joint of palpi slightly securiform. Mandibles robust and tridentate at the tip. Head triangular, joined to the prothorax by a short and broad neck; genae distinct and large. Eyes moderate, situated nearly in the middle of the sides, convex and finely granulated. Antennae moniliform, first joint larger, last joint elongated and acuminate at tip. Prothorax sub-quadrate, slightly narrowed posteriorly; sides irregularly and lightly denticulate. Elytra parallel, elongated and evenly rounded posteriorly, bordered externally, and covering the entire abdomen. Claws moderate; first joint of tarsi very small.

We have one species and one variety.

1. **C. clavipes** Fabr.—Bright reddish-ferruginous: sometimes clouded with darker patches. Body very depressed, sides parallel; surface finely and closely punctured. Antennae black, about equal to head and prothorax in length; covered thinly with coarse pubescence. Prothorax not margined; surface with one median

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and two lateral, longitudinal rounded ridges of very slight elevation. Prosternal inter-coxal process long, more or less acute at the extremity, toward which it is slightly swollen. Mesosternal inter-coxal process broad and squarely truncated. Lateral border of elytron equal to one-fourth of its width. Elytra covered with foveate punctures, which in some specimens seem to be aggregated into disjointed striae-like rows, while in others they have no visible order. Legs of same color as the body, tarsi darker. Length 10.0—13.0 mm.

Atlantic Slope.

Var. *puniceus* Mann.—Differs from the preceding in the following points:

The body is more elongated, and usually of a brighter color. The first joint of the antennae is usually of a dark testaceous, while in *clavipes* it is black. The antennae are slightly longer, and the neck slightly narrower in *puniceus*. Length 12.0—16.4 mm.

Pacific Slope. Plate V, Fig. 3.

This is a case where it seems as if simple climatic influence, and diversity of physical conditions, had worked a change in a species in a comparatively short period of time; the same is the case in *Prostomis* and *Brontes*. It is the largest species of the family in our territory.

INO De Casteln.

Antennae long, first joint large; the others moniliform, the last ovulate. Last joint of maxillary palpi long and acuminate. Tarsi slender, last joint much larger than the others. Body depressed. Head very large, broader than the prothorax, not constricted behind; eyes small. Prothorax flat, rounded anteriorly and posteriorly, sinuous laterally. Scutellum small, rounded posteriorly. Elytra quite long, flat and rounded behind. Abdomen short and broad. Legs moderate, femora broad, compressed; tibiae unarmed.

The above is the original diagnosis of De Castelnau as quoted by Lacordaire in the Genera des Coléoptères, and founded on a Madagascan species. It will be seen to require slight modification, at least for one of our species.

We have two species which may be distinguished as follows:

Head broader than prothorax, eyes convex.....1. **recluса.**
Head equal in width to prothorax, eyes flattened.....2. **immunda.**

These characters do not appear to depend upon sex.

1. **I. recluса** Lec.—Form moderately elongated and depressed, surface shining. Punctures of head and prothorax rather large in size, but very sparse and shallow. Integuments thin and transparent, the folds of the wings being visible through the elytra. Color very pale yellowish-testaceous. There is an almost complete absence of pubescence. Head sub-quadrate, broader than long; eyes small, but convex, in advance of prothorax, their own length. Prothorax narrower than head and smaller, broader than long, and strongly narrowed behind; sides undulated, lateral striae absent. Scutellum very small, nearly circular, and slightly concave. Elytra at base as broad as the head, gradually widen-

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ing posteriorly, rounded separately behind, longer than the head and prothorax together, and leaving the last third of the second, the third, fourth and fifth ventral segments exposed. Antennae as long as the elytra, first joint moderate, subglobular; joints two to eleven, much narrower, sub-equal, but increasing perceptibly in length toward the tip. Length 1.9 mm.

Plate V, Fig. 7.

I am aware of only four specimens, all from Texas.

2. **L. immunda** Reit.—Form moderately elongated and depressed. Surface shining, free from pubescence. Punctures of head and prothorax coarse, and rather close. Color of male brownish black; of female rather dark cinereo-testaceous. Head sub-quadrate; eyes small, flat and their own length in advance of prothorax. Prothorax of same width as head, very slightly broader than long, and strongly narrowed posteriorly; sides irregularly undulated. No traces of lateral striae. Elytra very slightly longer than head and prothorax together, leaving last four abdominal segments exposed, broader posteriorly; width across the base almost equal to that of head. Antennae equal in length to elytra, rather stout, coarsely and sparsely pubescent; joints sub-equal, last joint elongated, and constricted strongly near the tip into a cylindrical process, as in *Hemipeplus*. Length 2.6 mm.

Plate V, Fig. 8.

Originally described by Reitter. I have before me two specimens from Piney Point, Md. (Schwarz)

The principal points of distinction between the two species are the size and structure of the antennae, shape of the head and eyes, and the punctuation. The integuments in the last species also seem to be a little denser than in the first. The peculiarity in the structure of the last joint of the antennae, mentioned in the description of *immunda*, also exists in *reclusa*, but to a less marked degree.

LÆMOPHLŒUS De Casteln.

Mentum very short. Ligula corneous, entire and rounded in front; mandibles generally short, bi- or tri-dentate at their extremities. Labrum transverse, usually entire; outer lobe of maxilla rounded at the extremity, where it is densely ciliated; inner lobe terminated by a corneous hook. Antennae variable. Eyes moderate or small, convex. Head not restricted behind. Tarsi with the first joint small; middle and posterior four-jointed in the male, all others five-jointed. Body more or less depressed.

In the study of this genus we are met by peculiar difficulties, although the species comprising it present a general *facies* which is unmistakable.

The males and females differ very much, and, as in the Lucanidae, the former are in most cases the larger, and often of different form. This alone serves to make the study of a mass of undescribed species a very unsatisfactory one. The antennae may be terminated by a well-marked club, may be filiform or even attenuated, and are often clubbed in the female, and filiform in the male. The first joint may be very short, very

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long, or so abnormally shaped as to have no parallel, with which I am familiar, in the family of Coleoptera.* The elytra though usually covering the entire abdomen, in some species leave a large portion exposed. The scutellum may be transverse, semi-circular, or triangular. Erichson first proposed this latter peculiarity as a basis of classification, taken in connection with the emargination of the epistoma, and in my search for characters which should be unmistakable, I was led to try this method. After figuring the scutellum of each of our species, it became immediately apparent that they would not serve the purpose, because although in *nitens* the scutellum is acutely triangular with the sides almost perfectly straight, we find other species in which it possesses all degrees of transversality down to those in which it is very thin and transverse, and it would be very difficult in practice to draw the line between any divisions based on the structure of this part.

The antennae offer characters which are easily recognizable, and appear to be very constant, and which have been assumed as the basis of the following table of species.

I have in the following synopsis of the genus possibly made mistakes, and this possibility becomes stronger in those species which are European, and for the identification of which I had to rely solely on the descriptions of the various authors. I would, however, say in this connection that the descriptions and figures given in the excellent work of Sturm, "Deutschlands Fauna," are almost equivalent to a study of the insects themselves.

The following is the classification which is adopted for our species:

A.—First joint of antennae of normal form; second joint shorter than the third. Labrum emarginate.

Last three joints of antennae ♂ flattened ..... *

Joints of antennae ♂ sub-equal.

Last joint ♂ bent ..... 1. **terminalis.**

Last joint straight ..... 2. **biguttatus.**

Last three joints of antennae ♂ together nearly equal to one-third of their entire length.

Projecting teeth of epistoma much rounded anteriorly ..... 3. **fasciatus.**

Projecting teeth of epistoma very acute ..... 4. **LeConteï.**

* Labrum entire; transverse groove of head wanting ..... 5. **floridanus.**

Labrum entire; antennae irregular.

Body depressed.

Elytra entire ..... 6. **chamæropis.**

Elytra shorter than the abdomen ..... 7. **modestus.**

Body convex.

Anterior angles of prothorax toothed ..... 8. **convexulus.**

Anterior angles rounded, never toothed ..... 9. **adustus.**

* Separated as Dysmerus.

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B.—First joint of antennae of normal form; second joint equal to or longer than the third.

Head having transverse groove.

Anterior angles of prothorax toothed.....10. **testaceus.**

Anterior angles not toothed.....11. **nitens.**

Head having no transverse groove.

First joint of antennae ♂ equal in length to the three following together. 12. **punctatus.**

First joint of antennae ♂ and ♀ equal to or less than the next two together; antennae ♂ and ♀ terminated by a loose club, formed by enlargement of the last three joints, which are sub-equal.

Sides of prothorax deeply undulated.....13. **Horni.**

Sides of prothorax entire.

Posterior angles undeveloped.....14. **rotundicollis.**

Posterior angles well marked.

Eyes large, situated at posterior angles of head.....15. **quadratus.**

Eyes smaller and in advance of posterior angles of head.

This distance equal to about three times the length of the eye. 16. **cephalotes.**

This distance equal to about the length of the eye.

Antennae moniliform and short.

Body sub-cylindrical.....17. **angustulus.**

Body depressed.....18. **Schwarzi.**

Joints of antennae elongated.

Sides of prothorax bistriated.....19. **extricatus.**

Sides of prothorax unistriate..... 20. **alternans.** 21. **ferrugineus.**

Head having no transverse groove; antennae of ♂ filiform or attenuated.

Head with strong median furrow.

Eyes large, at posterior angles of head.....22. **pubescens.**

Eyes very small, in advance of posterior angles.....23. **truncatus.**

Head without median furrow.....24. **pusillus.**

C.—First joint of antennae ♂ abnormally modified.

First joint of antennae ♂ toothed.....25. **denticornis.**

1. **L. termitualis** n. sp. *Male.*—Body lightly punctured, surface shining. Head and prothorax pale brownish testaceous, together nearly equal in length to the elytra. Elytra much darker, castaneous; the middle portion of each is much paler, thus forming two vittae. Antennae equal in length to the prothorax and elytra together, testaceous: joints sub-equal, elongated; second joint smallest, last three joints much flattened; all are thickly pubescent, but the pubescence of the last joint is very short and recumbent. Eyes moderate, convex. Head triangular, width across the eyes greater than the breadth of prothorax. Prothorax narrowed strongly behind; sides arcuate and slightly sinuous. Marginal furrows very strong. Elytra slightly narrower than prothorax, strongly margined, striate and obtusely rounded behind; sides parallel, slightly arcuate. Legs moderate, pale testaceous. Length 3.6 mm.

Female.—Colors throughout same as in male; head and prothorax much shorter and narrower, together equal in length to three-fifths of elytra. Elytra of same length as in male, rather narrower, and less obtusely rounded behind. Antennae

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equal to about three-fourths of elytra in length, last three joints larger, very slightly flattened, and forming a loose club. Last joint normal in shape, but rather longer than the preceding. Vittae distinct as in male. Length 2.9 mm.

Plate VI, Fig. 2, ♂.

A full series of this fine species is before me from the cabinet of Dr. LeConte, also two specimens from Mr. Schwarz, all from Texas. The peculiarity in the last joint of the male antennae is, I believe, unique in the genus.

2. **L. biguttatus** (Say). *Male.*—Dark castaneous, a spot of a circular outline, and well defined, before the centre of each elytron is of a lighter tint; legs and antennae a little paler. Surface densely punctured. Head triangular, eyes moderate, transverse groove strong. Prothorax narrowed behind; sides very arcuate, lateral grooves well marked. Elytra nearly twice as long as the head and prothorax together, strongly margined, striate and obtusely rounded. Antennae shorter than elytra, joints sub-equal, first joint longest, second shortest, last three joints slightly broader and flattened. Length 3.0—3.9 mm.

Female.—Color and punctuation same as in male. Head and prothorax much smaller. Antennae equal to half the length of body; last three joints suddenly larger, forming a loose club. Length 2.6—3.0 mm.

Plate V, Fig. 9, ♂.

This is a common species distributed throughout our territory.

3. **L. fasciatus** Mels. *Male.*—Body pale castaneous; elytra somewhat darker; legs and antennae of same color as prothorax. Surface rather lightly punctured and shining. Head sub-triangular, transverse groove well marked. Prothorax slightly narrowed behind, a little broader than head, lateral striae well marked; sides arcuate and slightly sinuous. Elytra equal in length to twice the head and prothorax together; an irregular, somewhat indefinite spot of lighter tint is usually present before the middle of each, which generally attains the exterior edges: sides sub-parallel, slightly arcuate; rather obtusely rounded posteriorly; strongly margined and striate. Antennae slightly longer than head and prothorax together, joints gradually larger toward the tip; last three broadest and flattened. Length 3.1 mm.

Female.—Colors and punctuation same as in male. Head and prothorax much narrower. Antennae a little longer than head and prothorax together, last three joints suddenly larger. Elytra of proportionally the same length as in male. Length 2.6 mm.

Plate VI, Fig. 3 ♂.

The last two species resemble each other somewhat, until closely examined; *fasciatus* may be recognized at once, however, by the antennae and punctuation; it is widely distributed.

4. **L. LeContei** Grouv. *Male.*—Testaceous throughout. Surface lightly punctured and shining. Head sub-triangular; eyes moderate. Prothorax equal in width to head across the eyes, narrowed slightly behind; sides moderately arcuate; lateral furrows very well developed. Elytra about one-third as long again as the head and prothorax together; equal in width to prothorax, entire, strongly

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margined, striate, and obtusely rounded behind; sides parallel. Antennae equal in length to elytra; last three joints much longer and broader; flattened. Length 2.0 mm.

Plate V, Fig. 10.

May be distinguished immediately by its comparatively small size, immaculate surface and antennae. I have unfortunately only one specimen before me, which, however, is a male. The exact locality is not given.

5. **L. floridanus** n. sp. *Male.*—Form moderately elongated, strongly depressed; sides parallel. Body nearly glabrous, and somewhat shining. Punctures of head and prothorax rather fine and sparse; elytra striate. Color reddish testaceous, head and antennae a little darker. Head strongly transverse, broad; epistoma tri-sinuate; labrum entire; eyes small, convex; transverse groove wanting; median line faint; mandibles large and arcuate. Prothorax transverse, narrower than head, narrowed somewhat strongly behind; sides sinuate; anterior and posterior angles acute; lateral striae rather obscure. Scutellum triangular. Elytra about one-fourth as long again as head (including mandibles) and prothorax together, narrower at the base than the latter, entire, and evenly rounded behind; sides parallel and arcuate, margined. Abdominal segments sub-equal. Antennae as long as elytra; first joint as long as eye, robust and ciliated with long hairs on the anterior surface; second small, third elongated, fourth to eighth sub-equal, and nearly moniliform, ninth to eleventh enlarged and strongly flattened, forming a loose club, last joint strongly carinated, all coarsely pubescent. Length 3.5 mm.

Plate V, Fig. 11, and Plate VI, Fig. 1.

This species appears to be very similar to *Reitteri* Grouv. from Brazil. It however differs from that species in the antennae and length of the elytra. One specimen, Tampa Bay, Florida (Schwarz).

The five species described thus far form a very distinct group, the distinguishing features of which are the great differences which exist between the male and female, and the remarkable and very heterogeneous antennae. The eyes in all are situated at the posterior angles of the head, and the elytra cover the entire abdomen. Although forming by themselves a well-marked division, they possess no differential characters of such importance as to be considered generic, and if we could separate them together as a genus, we might with equal propriety construct three genera from these five species from antennal characters alone.

6. **L. chamæropis** Sz.—Form rather elongated, depressed. Entire surface glabrous. Head and prothorax lightly, minutely and sparsely punctured; elytra not punctured, striate. Head and prothorax dark testaceous, integuments thick; elytra pale testaceous, thin and transparent; legs and antennae darker. Head sub-triangular; eyes rather prominent and finely granulated; transverse groove very feebly developed. Prothorax equal in width to head, rather broader than long, slightly narrowed posteriorly; sides arcuate; anterior angles rounded, posterior well developed; lateral striae prominent. Elytra ♂ of rather greater length

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than head and prothorax together, obtusely rounded behind and entire; sides nearly parallel; striae faint. Scutellum triangular. Antennae ♂ equal in length to elytra; first joint broad, equal in length to eye; second joint sub-globular. third narrower, much elongated and fusiform, fourth to eighth sub-equal, last three suddenly enlarged; ninth and tenth joints perceptibly flattened; eleventh cylindrical and oblong. The female differs from the male in the antennae, which are much shorter, and in which there is no flattening of the ninth and tenth joints; the second joint is larger and nearly globular, and the third is much narrower, and of the same length as the second. The elytra are also proportionally longer. Length 1.4—1.7 mm.

Plate VI, Fig. 4. Southern States.

In regard to the preponderance in length of the third over the second joint of the antennae, this species gives us the only exception to the general rule of division A, in which it is regarded as common to both sexes.

7. **L. modestus** (Say).—Body elongated, dark testaceous, legs and antennae same; sides parallel. Surface nearly glabrous, shining and sparsely, though rather deeply punctured; elytra foveo-striolate. Head sub-quadrate, transverse groove very deep, median line faint; eyes small, convex, prominent and situated slightly in advance of the posterior angles of head. Prothorax slightly narrowed behind, quadrate; anterior angles rounded, posterior very prominent; sides moderately arcuate; lateral striae very distinct. Elytra equal in width to prothorax, elongated, sides parallel; squarely truncated behind, and leaving nearly the entire fifth ventral segment exposed. Antennae ♂ equal in length to the head, prothorax and elytra together, very slender and filiform, last seven joints almost exactly equal; first equal in length to last, but about twice as thick; all moderately pubescent. Antennae of ♀ same as ♂, excepting the length, which is equal to that of the elytra and projecting abdominal portion together; the eighth joint is also perceptibly smaller than the seventh, and the last three are almost imperceptibly enlarged. The first four abdominal segments in both sexes are short and equal, the fifth is almost equal in length to the first four together. Scutellum small, sub-triangular. Length 1.8—2.3 mm.

Plate VI, Fig. 5.

A common, broadly diffused, and well-marked species. There seems to be no flattening in the terminal joints of the antennae.

8. **L. convexulus** Lec.—Form broader and much more convex than that of the preceding species. Body, legs and antennae dark brownish testaceous, shining. Punctures on head sparse and coarse, those of prothorax closer and finer; elytra foveo-striolate. Head sub-triangular; eyes small, in advance of posterior angles; transverse groove and median line rather obscure. Prothorax convex, a little broader than head, slightly narrowed behind and very short; sides very arcuate anteriorly; anterior angles projecting in the form of well-marked teeth; posterior angles also prominent; lateral striae not very distinct. Elytra equal to twice the length of head and prothorax together, much broader than the latter, entire, and evenly rounded behind; sides parallel, slightly arcuate; surface covered sparsely with rather long setae arranged in rows. Scutellum evenly rounded behind, large. Antennae rather shorter than elytra, last three joints abruptly en-

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larged, cylindrical and sub-equal; all the joints are coarsely pubescent. Abdominal segments nearly equal. Length 1.9—2.4 mm.

D. C., Mich. Plate VI, Fig. 6.

Does not appear to be very common.

9. **L. adustus** Lec.—Form convex. Surface of head and prothorax thickly and very coarsely punctured, glabrous; elytra punctato-striate. Body, legs and antennae very dark ferruginous. Head sub-triangular; eyes rather large, very convex and prominent; transverse groove not prominent. Prothorax equal in width to breadth across the eyes, very short and convex; sides very arcuate anteriorly, and converging posteriorly; anterior angles evenly rounded; posterior angles prominent and projecting; lateral grooves very well marked. Elytra equal in length to twice the head and prothorax together, convex and evenly rounded behind, entire; sides slightly arcuate; surface covered sparsely with rather short setae arranged in rows. Abdominal segments sub-equal. Antennae but slightly longer than head and prothorax together; last three joints suddenly longer, and last joint broadest, strongly flattened and broadly carinated; all coarsely pubescent. The female antennae are rather shorter, and the last joint normally conical. The epistoma also seems to be a little more acutely emarginated in the female. Scutellum transverse, sub-triangular. Length 1.4—2.0 mm.

Plate VI, Fig. 7.

A very common, widely diffused species. The elytra are usually clouded posteriorly with a darker castaneous tint.

10. **L. testaceus** (Fab.)—Form moderately elongated, depressed. Head and prothorax rather finely punctured; punctures of head slightly more scattered; elytra foveo-striolate; body, legs and antennae testaceous; integuments dense. Head sub-triangular; eyes moderate, convex and slightly in advance of posterior angles; transverse groove and median line very evident. Prothorax quadrate, covered with short and sparse setae; sides converging behind, slightly in ♂, almost parallel in ♀; anterior angles very plainly toothed; posterior angles right; lateral striae strongly developed. Elytra elongated; as wide as, or wider than prothorax; one-half as long again as the head and prothorax together, covering entire abdomen with the exception of the tip of the fifth ventral segment; rather obtusely truncated behind, and covered with very short and sparse setae arranged in rows; second, third and fourth abdominal segments equal; first and fifth sub-equal, and each about half as long again as the second; all sparsely pubescent. Antennae ♂ nearly equal in length to entire body, last seven joints equal and cylindrical, first joint nearly equal to the next two in length, and much the most robust of any; second and third joints equal in length. Antennae ♀ equal in length to elytra; first joint largest, last three longer than the preceding, and very slightly broader. Scutellum sub-triangular. Length 1.3—1.9 mm.

Plate VI, Fig. 8, ♀.

This is a common cosmopolitan species.

11. **L. nitens** Lec.—Form elongated, depressed. Head and prothorax testaceous; elytra paler, thinner and translucent; legs and antennae testaceous; surface shining; punctuation of head and prothorax very sparse and fine. Head sub-triangular; eyes moderate, situated very near the posterior angles; transverse groove well developed; median line not distinct. Prothorax sub-quadrate, as wide

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as head, narrowed moderately behind; sides slightly arcuate; anterior angles rounded, posterior right; lateral striae very strong. Scutellum triangular. Elytra obtusely truncated behind, and leaving nearly the whole of the fifth ventral segment exposed in the male; slightly longer, and more evenly rounded behind in the female, glabrous and almost imperceptibly and irregularly striolate; sides subparallel. Fifth abdominal segment twice as long as the fourth. Antennae ♂ nearly as long as the body, first joint large, second smaller, third smallest; last seven joints equal and cylindrical; terminal process of last joint well developed. Antennae ♀ rather shorter, three outer joints a little wider; all very pubescent, as is also the case with the dorsal and ventral surfaces of the abdomen.
Length 1.5 mm.

Plate VI, Fig. 9, ♂.

The above description was taken from the original type-specimen in the cabinet of Dr. LeConte. Widely distributed.

The principal difference between *testaceus* and *nitens* are the following:

In *nitens* the transverse groove of the head is rounded behind, and the curve of emargination of the epistoma is very flat in the middle, but curves to the front more rapidly at the sides, while in *testaceus* the transverse groove is acutely angled behind, with the sides nearly straight, and the emarginational curve is evenly rounding throughout, broader and much more feeble. The anterior angles of the prothorax in *nitens* are, in normal specimens, evenly rounded, without any appearance of a tooth, while in normal specimens of *testaceus* this tooth is very prominent. The integuments in *nitens* are thinner and more translucent, as a rule, than in *testaceus*. The scutellum is acutely triangular in the former, and rounded behind in the latter. The elytra of *nitens* leave nearly the whole of the dorsal surface of the last ventral segment exposed, while those of *testaceus* cover the entire abdomen with the exception of the merest tip of the last ventral segment. This last differential character is the most constant of all, and is the one upon which I chiefly rely in separating these very closely allied species.

12. **L. punctatus** Lec.—Form moderately elongated, depressed; surface shining. Punctures of head and prothorax large and deep, but rather sparse; elytra striate. Color dark testaceous, elytra pale. Head sub-quadrate, deeply excavated in front of the antennae; eyes small, very slightly in advance of the posterior angles, and coarsely granulated. Prothorax wider than head, broader than long, narrowed behind; sides almost straight; anterior angles not prominent, posterior sharply defined; lateral striae double, well marked. Elytra as broad as prothorax, nearly twice as long as head and prothorax together, entire, and evenly rounded behind; sides parallel, nearly straight. Abdominal segments sub-equal. Antennae ♂ about as long as the body; first joint very robust, and as long as the three following together; second and third joints sub-globular; fourth longer; fifth to seventh equal and cylindrical; eighth smaller; ninth to eleventh elongated, and almost cylindrical; terminal process of last joint not well developed.
Length 1.6 mm.

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Southern States (LeConte), Georgia (Schwarz), Washington, D. C. (Ulke) Plate VI, Fig. 10.

This species appears to be very distinct; the description and figure have been taken from Dr. LeConte's type-specimen, which is a male.

The female differs materially from the male. In the former the head has no indication of the deep excavation at the sides, and the first joint of the antennae is only equal in length to the next two together. The entire antenna is also much shorter than in the male. The female was described by Dr. LeConte as *L. geminatus*. Plate VI, Fig. 13.

13. **L. Horni** n. sp.—Body depressed, moderately elongated; entire surface covered thickly with short, cinereous setae, which have no definite order on the head and prothorax, but which are arranged in closely approximate rows on the elytra; the head and prothorax are, in addition, punctured thickly, and rather coarsely. Color testaceous, integuments thick and opaque. Head sub-triangular; eyes moderate, coarsely granulated, very slightly in advance of posterior angles; sides bordered and sinuous; transverse groove not visible, no median line. Prothorax sub-quadrate, wider than head, slightly narrowed behind, dorsal surface nearly plane; surfaces between lateral striae and sides very concave; sides rather acutely and deeply undulated; lateral striae well developed. Scutellum sub-triangular and transverse. Elytra much wider than prothorax; about twice as long as the head and prothorax together; entire and evenly rounded behind, faintly costate and strongly bordered; dorsal surface flat; surfaces between lateral border and sides slightly concave; inflexed sides broad and well developed; sides parallel and arcuate; abdominal segments sub-equal; antennae a little longer than the head and prothorax together; last three joints larger; last joint largest, oblong, flattened, and strongly carinate; all densely pubescent. The female does not differ perceptibly, excepting that the last three joints of the antennae are less flattened. Length 1.8 mm.

California. Plate VI, Fig. 11.

I take pleasure in dedicating this very distinct species to a friend whose instructions have been of the greatest value to me, and to whom I feel greatly indebted.

14. **L. rotundicollis** n. sp.—Form elongated, moderately depressed; surface clothed with pubescence, which on the elytra is arranged in rows. Head and prothorax punctured as in *punctatus*. Color dark testaceous; legs and antennae same. Head elongated; eyes small, their own length in advance of posterior angles. Prothorax slightly longer and broader than head, length equal to breadth, rounded behind; lateral striae not prominent; sides very faintly and obscurely undulated; anterior angles rounded; posterior angles almost obsolete. Scutellum small. Elytra one-third as long again as head and prothorax together; as broad as the latter; entire and evenly rounded behind; sides parallel, and nearly straight. Antennae rather shorter than head and prothorax together; first joint small, first eight moniliform, eighth joint smallest, last three rather abruptly enlarged, subequal and not flattened; terminal process of last joint well developed. Length 1.9 mm.

South Carolina. Plate VI, Fig. 12.

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Founded on a specimen in the cabinet of Dr. LeConte, where it was labeled *alternans*. Crotch, in manuscript notes, said it was rather *ferrugineus*. It cannot, in my opinion, be either, as in both these species the posterior angles of the prothorax are always prominent and well developed. It seems to resemble more closely the European *ater*, in which, according to Sturm, the posterior angles are "*stumpf*," but not having any specimen of the latter for examination this cannot be stated positively.

15. **L. quadratus** n. sp.—Form very moderately elongated; depressed. Surface punctured as in *punctatus*; nearly free from pubescence. Body, legs and antennae dark testaceous; integuments dense. Head sub-quadrate; anterior angles of epistoma right; excavation in front of antennae clearly defined, rounded and deep; elevated margin distinct; eyes large, very near the posterior angles, and rather coarsely granulated. Prothorax sub-quadrate, very little wider than head, broader than long, hardly narrowed behind; sides very slightly arcuate, lateral striae double, both well developed; anterior angles acute, posterior right. Elytra one-third as long again as the head and prothorax together, a little wider than the latter; entire with the exception of the extreme tip of the fifth ventral segment, which is left exposed; strongly bordered and striate; evenly rounded behind; sides parallel and arcuate; scutellum evenly rounded behind, short and transverse. Fifth abdominal segment nearly twice as long as the fourth. Antennae about one-half as long as the body, sparsely pubescent, otherwise as in *punctatus* ♀, except that the first joint is shorter and more robust than in that species. Length 1.7 mm.

Gulf States. Plate VII, Fig. 1.

This species resembles *punctatus* ♀, but differs from that species most notably in the epistoma.

16. **L. cephalotes** Lec.—Form moderately elongated; depressed. Surface shining. Punctures of head coarse, those near the middle section so large as to constitute pits, decreasing in size and closeness anteriorly and posteriorly; punctures of prothorax much finer, with about the same degree of approximation; elytra striate, striae punctured; entire surface covered very sparsely with exceedingly minute, erect setae, those on head and prothorax apparently belonging to the punctures, those on the elytra arranged in rows. Color black, a longitudinal area occupying the entire interior of each elytron is a pale testaceous; legs and antennae dark testaceous. Head very large, quadrate; labrum emarginate; mandibles large, arcuate and prominent; eyes very small, situated on the sides before the middle; there is a deep elongated pit in the surface of the head near the base of each antenna. Prothorax of same width as head, broader than long, narrowed behind, much smaller than head, narrowly bordered; sides nearly straight; anterior and posterior angles well marked; lateral striae well developed, and not attaining the anterior margin. Elytra equal in length to head and prothorax together, slightly narrower than the latter, evenly rounded behind and entire; sides parallel. Scutellum sub-triangular, and rather large. First abdominal segment nearly twice as long as the second, last four equal in length. Antennae equal in length to the elytra; first joint very moderate, oval; joints two to eight moniliform, ninth abruptly larger and flattened, last joint more elongated, narrowed very slightly, flattened and fusiform. Length 2.4—2.6 mm.

Plate VII, Fig. 2.

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This singular species was placed by LeConte in his genus *Parandrita*, but there is apparently no valid reason for such separation. The reason given in the classification, viz.: the emargination of the labrum, will not hold good, as this is a peculiarity of many other species acknowledged to be genuine *Læmophlœi*. It belongs probably to the same group as Wollaston's *axillaris*, from Madeira, and is still more closely allied to Grouvelle's *capito* from Mexico.

It seems to be quite rare in collections; one specimen (Horn)—three specimens (LeConte)—all from Southern California.

17. **L. angustulus** Lec.—Form elongated, narrow and sub-cylindrical; sides parallel. Surface punctured, elytra striate and sub-costate; punctures of head coarse, close and elongated, those of prothorax finer. Color of body, legs and antennae testaceous. Head sub-triangular; eyes small, not prominent, on the sides and well advanced; surface not pubescent. Prothorax of same width as head, longer than wide, and slightly narrowed behind; anterior and posterior angles well marked; sides nearly straight; lateral striae moderately distinct; surface covered sparingly with pubescence. Elytra a little longer than the head and prothorax together, of same width as the latter; entire and evenly rounded behind. Metasternum very long, so that the abdomen is hardly one-half the length of the elytra. Abdominal segments sub-equal, the first a little longer than the others. Antennae short, slightly longer than the prothorax, first joint moderate; joints two to eight smaller, sub-globular; last three rather abruptly enlarged and flattened, forming a loose club. Length 2.0 mm.

Plate VII, Fig. 3.

Also appears to be a rather uncommon species. I have specimens before me from D. C. and Col.

18. **L. Schwarzi** n. sp.—Form elongated, depressed; sides parallel; surface of head and prothorax not distinctly punctured, but rather coarsely granulated. Elytra striate and bordered; entire surface pubescent. Color testaceous, antennae same, legs a little paler. Head sub-triangular, eyes small, advanced and convex. Prothorax a little wider than head, as broad as long, perceptibly narrowed behind; sides arcuate; anterior angles rounded; posterior angles prominent and right; lateral striae moderately strong. Elytra about one-half as long again as the head and prothorax together; entire and evenly rounded behind; sides parallel and straight. Abdominal segments sub-equal. Scutellum small and triangular. Antennae visibly shorter than the head and prothorax together; first joint equal in length to eye, second smaller, third to eighth still smaller and globular, eighth joint smallest, ninth to eleventh abruptly enlarged and flattened, forming a loose club. Length 1.2—1.8 mm.

Plate VII, Fig. 4.

Resembles *angustulus* in the antennae and length of elytra, and *ferrugineus* in depression of body and form of prothorax. Rare in collections; one specimen (LeConte) Fla. two specimens (Schwarz) Fla. and D. C.

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19. **L. extricatus** n. sp.—Form moderately elongated, depressed. Surface of head and prothorax rather closely and coarsely punctured and pubescent. Elytra striate, striae very feeble. Color dark testaceous; elytra, legs and antennae paler. Head sub-triangular, bordered; eyes small, convex and well advanced. Prothorax wider than the head, very slightly broader than long, and perceptibly narrowed behind; sides slightly arcuate; anterior angles a little rounded; posterior angles acute; lateral striae distinct, traces of a second one being also visible. Elytra one-half as long again as the head and prothorax together, and much wider than the latter; entire and evenly rounded behind; sides parallel and slightly arcuate. Scutellum small and transverse. First abdominal segment about twice the length of the second, next three equal, fifth a little longer than the fourth. Antennae equal in length to head and prothorax together, first joint moderately elongated, second smaller and cylindrical, third and fourth much smaller, equal and sub-globular, fifth longer and cylindrical, sixth like fourth, seventh like fifth, eighth smallest and globular, ninth to eleventh larger and not perceptibly flattened; all moderately pubescent.—Length 1.8 mm.

Plate VII, Fig. 5.

One specimen from Missouri is before me.

20. **L. alternans** Er.—Form moderately elongated and depressed. Surface shining; punctures on head and prothorax rather fine, coarser on the latter; elytra striate and foveate; foveae large, and arranged in rows. Pubescence on head and prothorax rather dense and fine; that on elytra is shorter, coarser and in the form of erect setae, which are arranged in closely approximate rows. Color pale testaceous, legs a little lighter. Head sub-triangular, large; eyes advanced on sides of head, small and flat; median line visible. Prothorax a little narrower than the head, slightly wider than long, and feebly narrowed behind; sides nearly straight; anterior and posterior angles right; lateral striae well marked and equidistant from the sides throughout. Elytra about one-fourth as long again as the head and prothorax together, as wide as head, obtusely truncated behind, and entire; sides parallel and nearly straight. Abdominal segments equal. Antennae equal in length to the elytra; first joint very moderate, second smaller, third to eighth still smaller, moniliform and slightly elongated, ninth to eleventh somewhat abruptly larger and flattened, last joint more elongated and cylindrical than tenth; all densely pubescent. Length 1.9 mm.

Plate VII, Fig. 6.

A cosmopolitan species, but rather rare.

21. **L. ferrugineus** (Steph.)—Form moderately elongated, depressed; sides parallel. Punctures on head and prothorax coarse and close; elytra striate, striae closely approximate. Pubescence on head and prothorax long and abundant, that on elytra shorter, and in the form of erect setae arranged in very even rows. Surface moderately shining. Color dark testaceous. Head sub-triangular; median line distinct; eyes small, convex and slightly advanced. Prothorax as wide as head, length and breadth equal, very slightly narrowed behind; sides very moderately arcuate; anterior and posterior angles right; lateral striae rather faint. Scutellum small and evenly rounded behind. Elytra one-half as long again as the head and prothorax together, equal in width to the latter, entire, and evenly, though somewhat obtusely rounded behind; sides parallel and nearly straight. Abdominal segments sub-equal. Antennae equal in length to about one-half of

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the body; first joint very moderate, second smaller, third to eighth still smaller and slightly elongated, sub-equal; ninth to eleventh longer and broader, but not appreciably flattened; all densely pubescent. Length 1.4—1.7 mm.

Plate VII, Fig. 7.

This is also a cosmopolitan species.

22. **L. pubescens** n. sp.—Form moderately elongated and very depressed; sides parallel. Punctures on head and prothorax rather close and fine; elytra obscurely and closely striate; entire surface covered with rather dense pubescence, which is somewhat long and fine, that on the elytra is arranged in exceedingly approximate rows. Color dark testaceous; elytra, legs and tips of antennae much paler. Head sub-triangular, rather small; front of epistoma slightly emarginate; sides of same deeply and acutely excavated; eyes rather large, a little advanced and not prominent; median furrow well developed. Prothorax a little wider than head, broader than long and very slightly narrowed behind; lateral striae well marked; sides almost straight; anterior angles rather acute; posterior angles right. Scutellum small, transverse and evenly rounded behind. Elytra broader than prothorax, nearly twice as long as the head and prothorax together, obtusely rounded behind, and entire; sides parallel and almost straight. Abdominal segments sub-equal. Antennae about three-fourths as long as the body; first joint elongated, second smaller, a little elongated, third to eighth yet narrower, elongated and sub-equal, ninth to eleventh longer, but no wider, sub-equal and cylindrical; all densely pubescent. Length 1.5—1.9 mm.

Plate VII, Fig. 8.

The pubescence of the elytra resembles somewhat that of *Horni*, but is longer. California.

23. **L. truncatus** n. sp.—Form elongated, moderately depressed; sides parallel. Punctures of prothorax coarse and moderately close, those of head rather finer; elytra striate, striae punctate. Pubescence long and plentiful, that on elytra arranged in rows. Head moderate, very declivous in front of the line joining the bases of the antennae; median line visible; eyes very small, advanced and convex. Prothorax as wide as the head; very slightly broader than long and narrowed behind; lateral striae well developod; anterior and posterior angles acute. Scutellum small, evenly rounded behind. Elytra one-half as long again as the head and prothorax together, equal in width to the latter; entire and obtusely truncated behind, bordered; sides parallel, nearly straight. First three abdominal segments equal, last two much shorter and sub-equal. Antennae nearly as long as the entire body, first three joints moderate, slightly elongated, and decreasing in size; joints four to eleven gradually increasing in length and decreasing in width, density of pubescence increasing gradually toward the tip; basal joints strongly punctate. Length 1.9 mm.

Plate VII, Fig. 9.

One specimen, Michigan (Schwarz).

24. **L. pusillus** (Schön.) *Male.*—Form very moderately elongated, depressed. Punctuation rather fine and close on prothorax, coarser on head; elytra striate. Surface scarcely shining. Pubescence somewhat abundant, long and fine on head and prothorax, almost entirely absent on elytra. Color ferruginous, legs

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and elytra paler. Head broad and large; eyes small, not prominent, and in advance of posterior angles their own length. Prothorax narrower than the head, rather strongly narrowed behind; anterior and posterior angles well developed; sides but slightly arcuate; lateral striae distinct. Scutellum very small and transverse. Elytra much narrower than prothorax, slightly longer than head and prothorax together, entire and obtusely rounded behind; sides parallel and straight. Abdominal segments very short, second, third and fourth equal, fifth almost twice the length of the fourth; antennae as long as the prothorax and elytra together; first joint moderate, first three decreasing gradually in size, fourth a little more elongated than the third; joints five to ten equal in length and width, eleventh equal in width but much longer; pubescence dense toward the tip. Length 1.7 mm.

Female.—Head narrower than prothorax, which is sub-quadrate and scarcely narrowed behind. Elytra more than one-half as long again as the head and prothorax together, rounded more acutely behind than in the male, and as wide as the prothorax. Antennae rather shorter than the elytra, and slightly enlarged at tip. Length 1.7 mm.

Plate VII, Figs. 10 and 10*a*.

The above description of the male is taken from LeConte's type of *puberulus*, which was considered by Crotch as identical with the male of *pusillus*. By comparing the specimen with the description and figure of the male of the latter species as given by Sturm, I can but agree with him in this decision. The only difference between the type of *puberulus* and perfectly normal specimens of *pusillus* ♂ is, that in the former the head and prothorax are more developed laterally, and the elytra have become denuded of the usual setiform pubescence.

The species is common and cosmopolitan.

25. **L. denticornis** n. sp. *Male.*—Form moderately elongated, depressed; sides parallel. Punctures of head and prothorax small, deep and sparse; elytra striate. Surface shining: color deep reddish testaceous; integuments dense. Pubescence of head very short and sparse, that on prothorax more plentiful, that of elytra exceedingly sparse and longer. Head sub-quadrate; front of epistoma transverse, the sides being straight and parallel, thus forming a short quadrate projection of the head in front of the line joining the bases of the antennae; median line well marked. Prothorax a little wider than the head, broader than long; anterior and posterior angles well marked; sides straight, slightly converging posteriorly; lateral striae distinct, partially double. Elytra one-third as long again as the head and prothorax together, as wide as the latter, entire and evenly rounded behind; sides slightly arcuate. Antennae as long as elytra, first joint one-half as long as the entire remainder, and provided anteriorly with a short, apical and arcuate tooth, which is nearly perpendicular to the axis of the joint; joints two to eight moniliform, third and eighth joints equal, sub-globular and much the smallest, three outer joints enlarged, but not flattened. Length 1.8 mm.

Plate VII, Fig. 11.

Two specimens, Texas (Schwarz). I have not been able to identify the female as yet, but it probably lacks the tooth of the first antennal joint. This species bears a certain resemblance to Reitter's *uncicornis*.

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Unidentified Species.

26. **L. longicornis** Mann. Bull. Mosc., 1843, II, p. 303.

I have not been able to find this species—which was described by Mannerheim from Sitka—for the reason that I have had no specimens at all from that region under examination. The statement made in its description, "*antennae corpore multo longiores*," coupled with the well-known accuracy of Mannerheim, would seem, however, to leave no doubt of its reality.

LATHROPUS Er.

Differs from the preceding in the following characters:

The antennae are very short; joints one and two large, three to eight very small, nearly globular and sub-equal, nine to eleven larger, sub-equal and forming a loose club. The spurs of the front tibiae are very minute and nearly equal. Fifth joint of tarsi nearly double the length of all the others. Form generally a little more convex.

Perhaps the most remarkable difference is in the sculpture, which can be very conveniently studied on the head of *vernalis*, it being glabrous. I found the head, under high power, to be covered with minute elongated markings, the nature of which could not at first be determined. By chance the light was coming very obliquely, and it could be seen that one side of the markings was in deep shadow, the other being brightly illuminated. The dark side was that which was farthest from the source of light, and proved the ornamentation to consist of small, elongated elevations; this form of sculpture is apparently unique in our Cucujidae.

The antennae are very different in structure from any in *Læmophlœus*, and the terminal joints do not seem to be flattened. The prothorax is transverse, a little longer than the head, with the sides arcuate and undulated. There does not appear to be any appreciable sexual difference.

Our species are very small and quite uncommon; they may be tabulated as follows:

Color uniform; body glabrous above.....1. **vernalis.**
Elytra mottled with large patches of a paler tint; surface covered with exceedingly short and sparse setae.....2. **pictus.**
Color uniform; entire body covered with rather long and dense pubescence.
3. **pubescens.**

1. **L. vernalis** Lec.—Form moderately elongated, convex. Body dark, blackish castaneous, legs, front of head, labrum, and first eight joints of antennae paler. Surface above glabrous. Head and prothorax ornamented with small, elongated, closely approximate elevations; elytra punctato-striate, punctures large. Head small; eyes rather large, convex and in advance of posterior angles. Prothorax much wider than head, broader than long, convex; anterior margin arcuate;

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lateral striae distinct; anterior angles rounded, posterior angles prominent and acute. Elytra twice as long as the head and prothorax together, broader than the latter, entire and evenly rounded behind; slightly bordered; inflexed sides broad at the base, gradually disappearing posteriorly; sides parallel and arcuate. Abdominal segments equal, pubescent. Antennae slightly longer than prothorax, moderately pubescent. Length 1.0—1.7 mm.

Plate VII, Fig. 13.

Atlantic and Mississippi regions. The largest and most common of our species.

2. **L. pictus** Sz.—Form moderately elongated, convex. Surface covered with exceedingly short and sparse setae, which on the elytra are arranged in rows; roughly and finely sculptured; elytra punctato-striate. Head, prothorax and irregular clouded spots on the elytra, as well as the legs and the first eight joints of the antennae, testaceous; the remainder of the body dark castaneous. Head small; eyes large, near the posterior angles, and convex. Prothorax broader than the head, convex; lateral striae distinct; anterior edge nearly straight; anterior angles somewhat acute, posterior angles prominent and acute. Scutellum small, sub-triangular. Elytra nearly twice the length of the head and prothorax together, slightly broader than the latter, entire and evenly rounded behind; sides parallel and arcuate. Abdominal segments equal; antennae equal in length to the prothorax, moderately pubescent, three outer joints much darker.
Length 1.0—1.3 mm.

Plate VII, Fig. 14. Florida.

A much rarer species than the preceding.

3. **L. pubescens** n. sp.—Form moderately elongated and convex, entirely of a rather pale brownish castaneous. Surface of head roughly, though very finely sculptured, that of prothorax very finely granulate in texture, with large, coarse and close punctures; elytra striato-punctate and costate. Entire body covered with rather long, cinereous setae, which on the elytra are arranged in rows. Head moderate; eyes rather small, at the extreme posterior angles, convex. Prothorax wider than head, broader than long, convex; anterior edge moderately arcuate; fringe of cilia long and prominent; on the under surface this fringe is about one-fifth the length of the head; anterior angles rounded, posterior angles prominent and acute. Scutellum small. Elytra about one and three-fourths times the length of the head and prothorax together, entire and evenly rounded behind; sides parallel and slightly arcuate. Abdominal segments equal; antennae longer than the prothorax, densely pubescent, and with the three outer joints not darker. The terminal process of the last joint is almost as long as the remainder of the joint.
Length 1.0 mm.

Plate VIII, Fig. 1. California.

Having picked out a very small specimen from among Dr. LeConte's examples of *pictus* for the purpose of measurement, it became apparent, upon close examination, that it was either an exceedingly aberrant specimen of the latter, or an undescribed species. Considering the locality, size, antennae and pubescence, I was led to the latter conclusion.

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DYSMERUS n. gen.

This genus is founded upon a very singular insect collected by Mr. Schwarz in Florida; the specimen is probably a male, and is unique. It differs from *Læmophlœus* in the following particulars:

Second joint of antennae joined laterally to the first, which is of anomalous form. Outer joints not flattened; last joint wanting the terminal process, which is almost universal in *Læmophlœus*.

Although most closely allied to the above-mentioned genus, I feel warranted in separating it on account of the mode of attachment of the second joint of the antennae to the first, it being unlike anything existing in that genus, where the second joint is always joined to the apex of the first.

1. **D. basalis** n. sp.—Form elongated, very narrow, moderately depressed; sides parallel. Surface of head and prothorax covered very scantily with pubescence, and coarsely and rather closely punctured; elytra striate. Color ferruginous or dark reddish testaceous. Head elongate; eyes small, but prominent; in advance of posterior angles. Prothorax as broad as line across the eyes, as long as head and narrowed very slightly behind; sides straight; lateral striae apparent; anterior and posterior angles right. Scutellum very small and transverse. Elytra of same width as prothorax, longer than one-half of the body, entire, and rather obtusely rounded behind: sides parallel and straight; but slightly bordered. Abdominal segments equal and very short. Antennae nearly equal in length to head and prothorax together; first joint of very abnormal shape, one-half as long as the prothorax, and ciliated at its anterior tip, the second small sub-globular and affixed to the side of the first, third to eighth still smaller, equal and globular; joints nine to eleven much larger than the eighth, apparently not flattened; last joint ovulate. Length 1.7 mm.

Plate VII, Fig. 12.

The manner of connection of the first and second joints of the antennae forcibly reminds us of certain insects of the genus *Tesserocerus* in the Platypides, the first joint, however, in the latter genus is much more slender and prolonged farther beyond the point of juncture.

Tribe II.—BRONTINI.

This tribe contains but two genera, and three species which resemble greatly their European representatives; the genera may be separated as follows:

Sides of prothorax entire; anterior angles rounded; mesosternum truncate in front.....**Dendrophagus.**

Sides of prothorax strongly and minutely serrate; anterior angles strongly toothed; mesosternum emarginate in front.....**Brontes.**

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DENDROPHAGUS Schön.

Mentum strongly transverse, sinuate anteriorly. Ligula corneous, feebly emarginate anteriorly. External lobe of maxillae short and broad, ciliated at the tip; internal lobe small, terminated by a corneous hook. Palpi short and robust, the last joint ob-conical. Mandibles short, arcuate, bidentate at the tip, and provided with a ciliated border internally. Labrum transverse, truncate and ciliated anteriorly. Eyes small, rounded, not prominent. Prothorax elongate, parallel and entire. Legs short, femora enlarged near the middle, and compressed; tibiae straight, terminated by a very short spur. Tarsi pentamerous, slender; first joint very short, second and third longer, sub-equal, fourth short, last very long. Body very depressed.

We have but one species.

1. **D. glaber** Lec.—Form elongate and depressed; sides parallel. Surface deeply and coarsely punctured, punctures closer on prothorax than on head; elytra striato-punctate; covered very sparsely with fine short setae, which are longer and closer on the under side. Color dark brownish black. Head subquadrate, with two lateral grooves from the front, which do not extend to the posterior margin. Prothorax one-half as long again as the head, as broad as the latter, and not margined; anterior angles rounded, sides parallel and in-curvate before the middle, then converging rapidly behind. Elytra twice as long as the head and prothorax together, much broader than the latter, entire and evenly rounded behind; sides parallel and straight. Antennae nearly as long as the elytra, filiform, first joint as long as head, second very small, third longer, fourth to last sub-equal, last joint narrowly acuminate at tip; all moderately pubescent. The legs and antennae are a little paler in color than the body. Length 5.8—7.0 mm.

Plate VIII, Fig. 2.

Very widely distributed throughout the Northern regions of the United States and in British America. Resembles the European species, of which it is probably a variety only.

I have under examination a specimen from the N. W. Territory, which I am forced to refer to this species. It however represents a rather remarkable variety, and is undoubtedly the same as Mannerheim's *D. americanus*. It is a little more than two-thirds the length of the normal form, and of a very light color. The elytra are paler in color at and near the humeri. The prothorax is also relatively a little more coarsely punctured.

Although this may represent a genuine species, I am unwilling to regard it in that light without other specimens.

BRONTES Fab.

Differs from the preceding in the following characters:

Ligula corneous, cordate; last joint of the maxillary palpi ovulate and acuminate at the tip, that of the labial cut very obliquely, and prolonged in a long acute process. The genus is closely allied to *Dendrophagus* and differs only in the above characters and those mentioned in the table.

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We have two species which may be distinguished as follows:

Elytra of male angled posteriorly; head and prothorax paler in color than elytra..... 1. **dubius.**

Elytra male and female evenly rounded behind; head and prothorax of same color as elytra..... 2. **debilis.**

1. **B. dubius** Fab.—Form moderately elongated, very depressed. Surface punctate, punctures very large, and so close as to be almost confluent; elytra punctato-striate, covered with very short, stout and sparse, cinereous setae, which on the elytra are arranged in rows. Color brownish black; head, prothorax, legs and antennae paler. Head sub-quadrate, tri-lobed by two grooves, which extend almost to the posterior margin. Prothorax wider than head, broader than long, narrowed posteriorly; sides minutely serrate, sinuate; anterior angles very prominent and toothed, posterior angles rounded broadly. Elytra broader than prothorax, more than twice as long as head and prothorax together, entire; angled without, posteriorly ♂, evenly rounded behind ♀; strongly bordered; sides parallel and straight; inflexed sides broad and well developed. Antennae filiform, as long as the entire body, first joint slightly longer than the head, narrow and almost straight, second very small, third to eleventh sub-equal and more elongated, last joint narrower and somewhat rounded at the tip; all densely pubescent. Scutellum angulated slightly behind. The male has two very arcuate horn-like processes on the mandibles which the female does not possess. Length 4.8—5.8 mm.

Plate VIII, Fig. 3. Southern States.

Var. *truncatus* Mots.—Differs from the preceding in its smaller size. The antennae are somewhat shorter, and the sides of the prothorax are straighter, there being hardly any perceptible sinuosity behind the anterior tooth.
Length 4.2—5.0 mm.

Plate VIII, Fig. 3*e*. California.

2. **B. debilis** Lec.—Form elongate, depressed. Punctures of head and prothorax very large, deep, irregular and approximate, in some spots confluent; elytra punctato-striate and costate. Surface clothed with very short, robust and sparse, yellowish setae, arranged in rows upon the elytra; color deep black; antennae and mouth parts paler; abdominal segments somewhat paler and pubescent. Head sub-quadrate, longitudinal grooves not reaching the posterior border. Prothorax wider than head, broader than long, narrowed behind; sides minutely serrate, sinuate; anterior angles very prominent and toothed, posterior angles rounded. Scutellum evenly rounded behind. Elytra two and one-half times the length of the head and prothorax together, slightly wider than the latter, entire, and evenly rounded behind in both sexes, broadly margined; inflexed sides well developed; sides parallel and slightly arcuate. Antennae as long as the elytra and prothorax together, filiform, first joint much longer than the head, sinuate and broader toward the tip, second very small, third to eleventh sub-equal and elongated, last joint longer and almost imperceptibly narrower, acute at tip; all densely pubescent. Length 4.2—5.3 mm.

Plate VIII, Fig. 5. North Eastern United States.

This is the common Northern species, while *dubius* is more plentiful at the South. They are quite distinct.

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Sub-Family IV.—HEMIPEPLINAE.

This sub-family contains but one genus.

HEMIPEPLUS Latr.

Mentum transverse, feebly emarginate; ligula long, coriaceous and bilobed; lobes rounded and ciliated. External lobe of maxillae depressed, sub-oval, arcuate and slightly ciliated at the tip; internal lobe smaller, truncated and slightly ciliated at the extremity. Labial palpi very small, last joint depressed and truncated at the tip; maxillary palpi with the last joint securiform. Mandibles short, arcuate and acute. Labrum sub-quadrate, transverse, sinuate anteriorly Head sub-quadrate, broadest at the eyes, front squarely truncated. Eyes moderate or large, convex and prominent; antennae inserted at the extremities of the frontal truncation; sides of prothorax sinuate; scutellum moderate. Elytra greatly elongated, not covering entire abdomen. Legs short, femora oval, very compressed; tibiae almost straight. Tarsi heteromerous in both sexes, first four joints bilobed. Body extremely elongated and depressed.

We have two species, distinguished as follows:

Eyes large; sides of prothorax entire.....1. **marginipennis.**
Eyes small; sides of prothorax very slightly undulated.
2. **microphthalmus.**

1. **H. marginipennis** Lec.—Form extremely elongated and depressed. Punctures of head rather coarse, irregular and sometimes confluent; those of prothorax much finer, and so confluent as to present simply a roughened appearance. Elytra not punctured. Body pale yellowish testaceous. Head sub-quadrate. Eyes very large, convex and prominent. Tarsi 5—5—4 in both sexes.

Male.—Prothorax as wide as head across the eyes; sides sinuate, a deep puncture near each posterior angle. Elytra about two and three-fourths times the length of head and prothorax together, margined, obscurely striate, and with a coarse cellular texture; squarely truncate behind, and leaving almost the entire fifth ventral segment exposed. Body above entirely glabrous, with the exception of the exposed abdomen; below pubescent; fifth ventral segment longer than the fourth. Tibiae terminated by two stout, black spurs; first joint of posterior tarsi equal in length to last, but much larger and more robust, otherwise as in female. Antennae equal in length to head and prothorax together: first joint much elongated, second small, the remainder gradually increasing in size. Terminal process of last joint very well developed; all densely and very finely pubescent. Length 8.0 mm.

Female.—Prothorax narrower than head, length equal to breadth, front sinuate: a deep puncture near each posterior angle, the latter prominent, anterior angles rounded; sides sinuate. Elytra nearly three times the length of the head and prothorax together, broader than the head, rather squarely truncated behind, and leaving the tip of the last ventral segment exposed. Tibiae terminated by two short, stout, black spurs; first joint of posterior tarsi much the longest and largest, first 4—4—3 joints bilobed, large and densely pubescent beneath; terminal joints slender; upper surface of body covered densely with short setae. Abdominal segments equal; elytra not punctured, and not striate, feebly margined. Antennae somewhat longer than head and prothorax together; first joint short and very

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robust, second very small, the remainder gradually increasing in size; last joint terminated by a narrow process; all densely and very finely pubescent, with a few larger hairs. Length 5.0 mm.

Plate VIII, Figs. 6 and 6*d*.

A rather abundant species under palmetto bark in the Southern States (Schwarz).

2. **H. microphthalmus** Sz.—Form excessively elongated, depressed. Body punctured much the same as in the preceding species; elytra obscurely impressed. Head nearly glabrous, prothorax glabrous, elytra clothed with rather sparse and somewhat coarse pubescence; tarsi as in the preceding species. Head sub-quadrate, constricted behind; eyes small, very coarsely granulated; genae distinct. Prothorax as broad as head across the eyes, length equal to breadth, front emarginate; sides sinuate and obscurely undulated. Elytra equal in width to head, two and one-half times as long as the head and prothorax together, each elytron evenly rounded behind, leaving tip of last ventral segment exposed; sides parallel and straight.

Male.—Antennae somewhat longer than head and prothorax together; same as in female, except that the last three joints seem to be a trifle more abruptly enlarged, and the last joint is broader, with the terminal process well developed. Length 3.2 mm.

Female.—Antennae as long as head and prothorax together; first joint robust and ovulate; second small, the other gradually increasing in size; terminal process of last joint not so well developed; all densely and somewhat finely pubescent, with a mixture of longer hairs. Length 3.2 mm.

Plate VIII, Fig. 7.

Three specimens are before me, one each from Tampa, Enterprise, and Baldwin, Fla. (Schwarz), I have also seen three other specimens in the cabinet of the Agricultural Department at Washington. They do not seem to present any perceptible variation, except a very slight widening of the prothorax in one specimen which I have taken as the male. The two punctures of the prothorax are the same as in *marginipennis*. Found flying at night (Schwarz).

NOTE.—I had already come to the above conclusion respecting the sex of *Hemipeplus* before hearing of a discussion which had been carried on between two of our most distinguished coleopterists some years before on this same subject. Upon learning this, however, I sought to revise my decision, and renewed observation has only tended to confirm it. The following are my reasons for this adherence:

It has usually been accepted as a fact that *Hemipeplus* belongs to the Cucujidae, and in the immediate neighborhood of *Brontes;* its affinities must therefore be with the general characters of the Cucujidae on the one hand, and more particularly with those of *Dendrophagus* and *Brontes* on the other. We have also the following well known facts:

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1. Throughout *Læmophlœus*, *Lathropus*, *Dendrophagus* and *Brontes*, the males are distinguished from the females by the larger size of the former, as well as by their longer and more slender antennae.

2. Whenever there is a difference in the length of the first joint of the antennae owing to sex, the male has this joint the longer.

Coming within closer range, and considering the special sexual characters of *Brontes*, we have the following facts:

1. In the male the elytra are much more truncate at the posterior extremities than are those of the female.

2. The last abdominal segment of the female is about equal in length to the fourth, while in the male the last abdominal segment is nearly twice the length of the fourth.

We have therefore two general and two special sexual characters, the latter in a genus acknowledged to be very closely allied to *Hemipeplus*.

In *Hemipeplus marginipennis*, the larger specimens with elongate prothorax, differ from the smaller with quadrate prothorax in the following points:

1. In the former the antennae are longer and proportionally more slender.

2. In the former the first joint of the antennae is much elongated, while in the latter the first joint is nearly sub-globular.

3. The elytra of the former are very much more squarely truncated behind than are those of the latter.

4. The fifth abdominal segment in the former is longer than the fourth, while in the latter it is equal in length to the fourth.

One of the larger specimens which I have examined happened to have the sexual appendage protruding, and I have dissected a small specimen and examined the corresponding appendage. On comparing these with the penis and ovipositor of *Brontes*, respectively, I find a general resemblance, although it is not so satisfactory as the conclusion derived from the general considerations given above.

Sub-family V.—TELEPHANINAE.

This sub-family comprises two tribes, each of which consists of but a single genus. These tribes may be distinguished as follows:

Last joint of maxillary palpi securiform..... I. TELEPHANINI.
Last joint of maxillary palpi acuminate.....II. CRYPTAMORPHINI.

Tribe I.—TELEPHANINI.

One genus has thus far been described from the regions here considered.

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TELEPHANUS Er.

Last joint of maxillary palpi cut obliquely, securiform; that of the labial is cuneiform but truncated transversely. Mandibles short, robust and arcuate. Antennae variable in length; first joint long and fusiform. Prothorax generally longer than broad, constricted behind. Elytra broader than the prothorax, subparallel, a little narrowed and rounded behind. Legs slender, moderately long; posterior femora swollen; tarsi pentamerous; last joint bilobed.

Although the species in Mexico and South America are numerous, we have thus far only discovered two within our territory. It is, however, likely that others will be found. These species may be differentiated as follows:

Color ochreous yellow; head black.....1. **velox.**
Color of elytra dark brownish piceous; head and prothorax unicolorous, and of a dark fuscous tint.....2. **LeContei.**

1. **T. velox** Hald.—Form elongated. Head and prothorax equal in width; elytra one and three-fourths times the length of the head and prothorax together. Head black, remainder of the body yellowish testaceous. Elytra densely and coarsely pubescent. Head and prothorax more sparsely so; entire surface coarsely and closely punctured. Antennae about as long as elytra, darker toward the tip. Fifth abdominal segment much shorter than the fourth. Tarsi pubescent beneath. Length 4.0 mm.

Plate VIII, Fig. 4. Widely diffused.

This well known and graceful insect is very common under rubbish of various sorts, and as its name implies, runs with very remarkable swiftness. It is often mistaken at first sight for a Carabide from its habits and gait. The large securiform joints of the palpi often protrude in front of the labrum in such a manner as to give the appearance of a double horn-like process.

2. **T. LeContei** n. sp.—Form elongated and moderately convex. Head and prothorax moderately pubescent; pubescence of elytra long, moderately dense, and arranged in very closely approximate rows. Entire body dark brownish piceous; head and prothorax dark reddish testaceous, or dark fuscous. Head nearly quadrate; sides parallel, or nearly so; inter-antennal groove distinct; length from latter to posterior margin slightly greater than width at the last point; densely punctate; eyes moderate; antennae about equal in length to those of *T. velox;* of same color as head with the exception of the last joint, which is somewhat paler in tint; first joint nearly equal in length to the next three together. Prothorax nearly quadrate; sides parallel, and almost straight for three-fifths of the length, then converging moderately; surface closely punctured. Elytra twice as long as broad, punctato-striate; punctures large; interspaces much wider than the punctures; sides nearly parallel, and very slightly arcuate for four-fifths of the distance from the humeri, then together somewhat acutely rounded behind; humeral angles rather acute; surface shining through the pubescence; under surface of body of same color as the elytra, or but very slightly darker; legs somewhat paler. Abdominal segments moderate and successively decreasing in length posteriorly. Length 3.8 mm.

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The unique specimen of this species was received too late to admit of figuring; it is much more robust than *T. velox*, which it otherwise resembles in some respects; in color, however, it is entirely different.

After examining all of Grouvelle's recently described species of this genus, without being able to identify it among them, I am quite confident of its being new to science.

One specimen collected in Southern Arizona by Mr. Morrison.

I have dedicated this species to the late Dr. J. L. LeConte, as a slight token of regard for this most eminent coleopterist.

Tribe II.—CRYPTAMORPHINI.

One genus in which, thus far, but one species has been described.

CRYPTAMORPHA Woll.

Body elongate, parallel, depressed, similar to *Psammœcus*. Prothorax sub-cylindrical. Scutellum distinct, transverse. Labrum porrected, transverse, ciliated anteriorly. Mandibles distinct, bases broad, tips bidentate. Maxillae bilobed. Last joint of maxillary palpi fusiform and sub-acuminate; truncated at the base; that of labial securiform; mentum short, transverse. Ligula membranous. Legs cursorial, tibiae unarmed; tarsi heteromerous in the males, pentamerous in the females, pubescent; first joint abbreviated, second and third a little longer and equal, fourth excessively small, and immersed in the lobes of the third, last elongated; claws simple.

1. **C. Desjardinsi** (Guér.).—Form as in preceding genus. Pubescence moderately long and abundant on elytra, less abundant on head and prothorax. Punctures of head and prothorax rather small, shallow, and moderately approximate; elytra strongly and coarsely punctato-striate; the surface of the thorax exhibits a granular texture. Color testaceous, antennae darker toward the tip; narrow lines of dark castaneous extend on the internal edges of the elytra, from the base to a point slightly posterior to the middle, where they diverge very obliquely toward the exterior edges terminating at two-thirds of the distance, at the same time becoming broader and somewhat irregular. Head sub-quadrate, two lateral grooves starting at the front extend to within one-third its length from the posterior margin; eyes prominent and convex. Prothorax slightly narrower than width across the eyes, longer than broad; sides at first parallel and straight, then converging posteriorly; anterior angles rounded; sides provided with stiff bristles. Elytra broader than head, twice as long as head and prothorax together; sides slightly converging posteriorly. Antennae perceptibly longer than head and prothorax together; outer joints slightly broader, flattened and truncated transversely behind; sides sinuate; first joint enlarged and ovulate. Length 3.8 mm.

Plate VIII, Fig. 8. Cosmopolitan.

Resembles *Psammœcus* but differs in the antennae and oral organs. It is a graceful insect, very rapid in its movements, and similar in its habits to *Telephanus*. The very few specimens thus far taken in this

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country from the Pacific Coast were undoubtedly brought in articles of commerce. It has also been described from Madagascar, St. Helena and Madeira, and under three different generic names.

NOTE.—Lest some ambiguity may be apparent in the use of the term "margined" as used with reference to the prothorax in the preceding pages, it may be stated that in all my writings it will be understood to mean that the prothorax is limited laterally by a narrow surface, which is usually raised, but which in some cases may be continuous in elevation with the general surface and limited internally by a striated or grooved line.

Again when the term "edge" is employed in describing the pronotum, it will have reference to the boundaries of that part when considering the vertical cross-section, and the phrase would then read "edges acute," or "edges rounded." When the term "side" is spoken of, it will relate to the conformation of the lateral boundary of the pronotum with reference to its nature as a line, this line being the horizontal projection of the boundary as seen when viewed perpendicularly, and the phraseology to be employed will be "sides arcuate, straight or sinuate," or various modifications of these terms.

These matters are brought up at this time in order, if possible, to render the phraseology a little more concise and uniform. A striking example of this want of uniformity, is seen in the use of the term "margined," Dr. Sharp using the word as defined above, while one or two of our leading coleopterists have used it to indicate that the edges of the pronotum are acute, which is evidently an abnormal use, and one, the meaning of which, would be decidedly unintelligible to a person not familiar with this particular employment, however well-versed he might be with its usual signification as an English word.

In the case of *Narthecius*, as defined in the table of genera composing Group I of the Cucujinae, the expression "prothorax margined," has reference to the surface included between the lateral striae and the sides of the pronotum, and perhaps it would be less ambiguous to say in this case that the prothorax is striated in *Narthecius* and not striated in *Pediacus*, because of the comparatively great distance between these striae and the sides in the former genus.

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SCALIDIA.

Erichs. Nat. Ges. d. Ins. Deutsch. III, 1845, p. 305.
Taphroscelidia Cr. Check List Col. N. A. ed. 1.

1. **S. linearis** Lec. Smith's Misc. Coll. 1866, VI, p. 70.

PROSTOMIS.

Latr. Faun. Nat. Règn. Anim. 1825, p. 397.
Megagnathus Megerle Dej. Cat, 1 6d. p. 103.

1. **P. americana** Cr. Trans. Am. Ent. Soc. V, 1874, p. 74.

NARTHECIUS.

Lec. Class Col. I, 1861, p. 95.

1. **N. grandiceps** Lec. New Spec. Col. I, 1863, p. 70.

PEDIACUS.

Schuck. Elem of Br. Ent. I, p. 185.
Biophlœus Dej. Cat. 6d. 2, p. 315.—*Cucujus* Fab.
Herbst, Panz, Schön. Gyll.

1. **P. fuscus** Er. Nat. Ges. d. Ins. Deutsch. III, p. 313.—Sturm. Ins. XXI, p. 26.
Cucujus dermestoides Schön. Vet. Acad. Handl. 1809, p. 53.—Gyll. Ins. Suec. II, VIII, 2.
planus Lec. Agass. L'k. Sup. p. 223; Proc. Ac. Phil. 1854, p. 73.
subcarinatus Mann. Bull. Mosc. 1852, II, p. 363.
2. **P. depressus** Herbst. Käf. VII, p. 286.—Er. Nat. Ins. III, p. 311.—Sturm. Ins. XXI, p. 21.
Colydium depressum Herbst. Käf. VII, 286, 8.
var. *subglaber* Lec. Proc. Ac. Phil. 1854, p. 73.

CUCUJUS.

Fabr. Syst. Ent. 1775, p. 204.
Cantharis Linné Syst. Nat. II, p. 647.

1. **C. clavipes** Fabr. Spec. Ins. I, p. 257.—Oliv. Ent. IV, 74, bis, p. 4.—Lec. Proc. Ac. Phil. 1854, p. 73.
var. *puniceus* Mann. Bull. Mosc. 1843, II, p. 303.—Esch. Dej. Cat.3, 6d. p. 340.

INO.

Castlenau, Etud. Ent. 1835, p. 135.
Erich. Nat. Ins. D. III, p. 307.
Inopeplus Smith. Col. Br. Mus. P. I, p. 4.

1. **I reclusa** Lec. Trans. Am. Ent. Soc. 1880, VIII, p. 186.
2. **I. immunda** Reit. Verhandl. Kais-Kön. Zool. Bot. Gesell. in Wien. Jahr. 1878, XXVIII, p. 191.

LÆMOPHLŒUS.

(Dej.) DeCastelnau. Hist. Nat. d. Col. II, p. 385.
Cucujus Fab. Payk. Gyll. Oliv. Say.—*Parandrita* Lec.

1. **L. terminalis** n. sp.
2. **L. biguttatus** Say Journ. Ac. Phil. V, p. 267.—Lec. Proc. Ac. Phil. 1854, p. 73.
3. **L. fasciatus** Melsh. Proc. Ac. Phil. II, p. 113.

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4. **L. LeContei** Grouv. Fr. Ann. Séan. Oct. 13, 1875, p. 496, pl. 9.
5. **L. floridanus** n. sp.
6. **L. chamæropis** Sz. Proc. Am. Phil. Soc. XVII, 1878.
7. **L. modestus** Say Journ. Ac. Phil. V, p. 268.—Lec. Proc. Ac. Phil. 1854, p. 75.
   singularis Smith Col. Br. Mus. I, p. 7.
8. **L. convexulus** Lec. Am. Entomologist 1879, I, p. 2.
9. **L. adustus** Lec. Proc. Ac. Phil. 1854, p. 74.
10. **L. testaceus** (Fabr.) *Cucujus testaceus* Fabr. Ent. Syst. I, II, 96, 11.—*Brontes testaceus* Fab. Syst. El. II, 98, 6.—Duftsch. Faun. Aus. II, 273, 2.
    L. testaceus Erich. Nat. Ins. D. III, p. 320.—Sturm. Ins. XXI, p. 46.
    Zimmermanni Lec. Proc. Ac. Phil. 1854, p. 75.
    bullatus Lec. Proc. Ac. Phil. 1854, p. 76.
11. **L. nitens** Lec. Proc. Ac. Phil. 1854, p. 75.
    Gundlachi Grouv.
12. **L. punctatus** Lec. Proc. Ac. Phil. 1854, p. 75.
    geminatus Lec. l. c. p. 75.
13. **L. Horni** n. sp.
14. **L. rotundicollis** n. sp.
15. **L. quadratus** n. sp.
16. **L. cephalotes** Lec. Proc. Ac. Phil. 1854, p. 76.
17. **L. angustulus** Lec. Proc. Ac. Phil. 1866, p. 379.
18. **L. Schwarzi** n. sp.
19. **L. extricatus** n. sp.
20. **L. alternans** Erich. Nat. Ges. Ins. D. III, p. 325.—Sturm. Ins. XXI, p. 59.
21. **L. ferrugineus** (Steph.) *Cucujus ferrugineus* Creutz i, litt.—Steph. Ill. Br. Ent. Mand. IV, 223, 4.
    Cucujus testaceus Payk. Faun. Suec. II, 168, 5.—Gyll. Ins. Suec. II, XII, 5.
    amygdaleus Schön. Dej. Cat. éd. 3, p. 340.
    monilicornis Steph. Ill. Br. IV, p. 223.
22. **L. pubescens** n. sp.
23. **L. truncatus** n. sp.
24. **L. pusillus** (Schön.) *Cucujus pusillus* Schön. Syn. III, 55, 16.
    Cucujus minutus Oliv. Ent. IV, 74.
    Cucujus testaceus Steph. Ill. Br. Ent. Mand. IV, 224, 7.
    Cucujus crassicornis Waltl. Isis. 1839, 225, 28.
    L. pusillus Erich. Nat. Ges. Ins. D. III, p. 325.—Sturm. XXI, p. 50.
    exilis Dej. Cat. 2 ed. p. 340.
    homoceras Kunze in litt.
    puberulus Lec. Proc. Ac. Phil. 1854, p. 75.
25. **L. denticornis** n. sp.

Unrecognized Species.

26. **L. longicornis** Mann. Bull. Mosc. 1843, II, p. 303.

LATHROPUS.

Erich. Nat. Ges. d. Ins. D. III, 1845, p. 327.
Biophlæus Dejean.

1. **L. vernalis** Lec. Proc. Ac. Phil. 1866, p. 379.
2. **L. pictus** Sz. Proc. Am. Phil. Soc. XVII, 1878.
3. **L. pubescens** n. sp.

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DYSMERUS.

Gen. nov.

1. **D. basalis** n. sp.

DENDROPHAGUS.

Schön. Vet. Akad. Handl. 1809, p. 50.
Cucujus Payk. Faun. Suec. II, p. 168.

1. **D. glaber** Lec. Lake Sup. Agas. & Cab. 1850, p. 223.
cygnæi Mann. Bull. Mosc. 1846, II, p. 515.
var. *americanus* Mann. Bull. Mosc. 1853, III, p. 207.
var. *Germari* Mann. l. c. 1843, II, p. 306.—Esch. Dej. Cat. 3 ed. p. 383.

BRONTES.

Fabr. Syst. El. II, 1801, p. 97.
Ulieota Latr. Préc. d. car. gén. d. Ins. p. 46.
Cerambyx Linné.
Cucujus Payk. Oliv. Herbst.
Uliota Cr. Ch. List N. A. Col. Ed. 1, p. 45.

1. **B. dubius** Fabr. Syst. El. II, p. 97.—Lec. Proc. Ac. Phil. 1854, p. 76.
var. *truncatus* Mots. Bull. Mosc. 1845, I p. 92.—Mann. l. c. 1852, II, p. 36.
2. **B. debilis** Lec. Proc. Ac. Phil. 1854, VII, p. 76.

HEMIPEPLUS.

Latr. Faun. Nat. 1825, p. 398.
Nemicelus Dej. Cat. ed. 3, p. 140.
Ochrosanis Pas. Jour. Ent. 1866, p. 443.

1. **H. marginipennis** Lec. (*Nemicelus*) Proc. Ac. Phil. 1854, p. 79.
hemipterus Latr. (Lacordaire.)
hemipterus Dej. Cat. éd. 3, p. 140.
marginipennis Dej. Cat. l. c.
Dohrnii (♂) Pas. (*Ochrosanis*) l. c. pl. 18, fig. 7.
marginipennis (♂) Waterh. Ent. Mo. Mag. 1876, XIII, p. 121.
Dejeanii Waterh. l. c. (name suggested.)
2. **H. microphthalmus** Sz. Proc. Am. Phil. Soc. XVII, 1878.

TELEPHANUS.

Erich. Nat. Ins. III, 1845, p. 329.
Heterodromia Hald. Proc. Ac. Phil. III, p. 127.

1. **T. velox** Hald. Proc. Ac. Phil. 1851, III, p. 127.
atricapillus Er. Nat. Ins. III, p. 330.

CRYPTAMORPHA.

Woll. Ins. Mad. 1854, p. 156.

1. **C. Desjardinsi** (Guér.) *Psammœcus Desjardinsi* Guér. Jc. Règn. Anim. Ins. p. 196.
musæ Woll. Ins. Mad. p. 157.
Pseudophanus signatus Lec. Proc. Ac. Phil. 1859, p. 85.

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Explanation of the Plates.

NOTE.—The small vertical marks refer in all cases to the length of the entire insect, and never to the part to which they may be attached.

PLATE IV.

Fig. 1. *Silvanus surinamensis.*
1 *a.*—Antenna.

Fig. 2. *S. bidentatus.*
2 *a.*—Antenna.
2 *b.*—Under surface of head.
2 *c.*—Tarsus.
2 *d.*—Maxillary palpus.
2 *e.*—Punctuation of surface near scutellum.

Fig. 3. *S. planatus.*

Fig. 4. *S. imbellis.*

Fig. 5. *S. quadricollis.*
5 *a.*—Antenna.
5 *b.*—Mandible.

Fig. 6. *S. advena.*
6 *a.*—Antenna.

Fig. 7. *S. rectus.*
7 *a.*—Antenna.

Fig. 8. *S. opaculus.*
8 *a.*—Antenna.

Fig. 9. *Nansibius dentatus.*
9 *a.*—Antenna.
9 *b.*—Middle tarsus.
9 *c.*—Maxillary palpus.

Fig. 10. *N. repandus.*
10 *a.*—Antenna.

NOTE.—The lines on the prothorax of this figure are not intended for striae, but simply to mark the line along which the surface becomes rapidly declivous.

Fig. 11. *Scalidia linearis.*
11 *a.*—Antenna.
11 *b.*—Tarsus.

Fig. 12. *Prostomis americana.*
12 *a.*—Antenna.
12 *b.*—Under surface of head showing jugular processes.

Fig. 13. *Narthecius grandiceps.*
13 *a.*—Tarsus.
13 *b.*—Maxillary palpus.

PLATE V.

Fig. 1. *Narthecius grandiceps.*—Head enlarged.
1 *a.*—Under surface of head showing incipient jugular plates.
1 *b.*—Antenna.

Fig. 2. *Catogenus rufus.*
2 *a.*—Anterior tarsus.

Fig. 3. *Cucujus puniceus.*

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Fig. 4. *Pediacus depressus.*
Fig. 5. *P. fuscus.*
Fig. 6. *P. depressus* var. *subglaber.* Taken from Dr. LeConte's type. Attention is called to the deformity to be seen in the left antenna.
Fig. 7. *Ino reclusa.*
7 *a.*—Antenna.
7 *b.*—Anterior tarsus.
Fig. 8. *I. immunda.*—Antenna.
Fig. 9. *Læmophlæus biguttatus* ♂.
9 *a.*—Three terminal joints of antenna viewed horizontally.
9 *b.*—Same viewed vertically.
Fig. 10. *L. LeContei* ♂.
Fig. 11. *L. floridanus* ♂.

PLATE VI.

Fig. 1. *L. floridanus.*—Antenna ♂.
Fig. 2. *L. terminalis* ♂.
2 *a.*—Last three joints of antenna viewed horizontally.
Fig. 3. *L. fasciatus* ♂.
3 *a.*—Last four joints of antenna viewed horizontally.
Fig. 4. *L. chamæropis.*
Fig. 5. *L. modestus.*
Fig. 6. *L. convexulus.*
Fig. 7. *L. adustus.*
Fig. 8. *L. testaceus* ♀.
Fig. 9. *L. nitens* ♂.—Taken from Dr. LeConte's type-specimen.
Fig. 10. *L. punctatus* ♂.—Taken from Dr. LeConte's type-specimen.
Fig. 11. *L. Horni.*
Fig. 12. *L. rotundicollis.*
Fig. 13. *L. punctatus* ♀.

PLATE VII.

Fig. 1. *L. quadratus.*
Fig. 2. *L. cephalotes.*
2 *a.*—Head greatly enlarged.
2 *b.*—Antenna.
2 *c.*—Tarsus.
Fig. 3. *L. angustulus.*
Fig. 4. *L. Schwarzi.*
Fig. 5. *L. extricatus.*
Fig. 6. *L. alternans.*
Fig. 7. *L. ferrugineus.*
Fig. 8. *L. pubescens.*
Fig. 9. *L. truncatus.*
Fig. 10. *L. pusillus* ♂.—Taken from Dr. LeConte's type of *L. puberulus.*
10 *a.*—*L. pusillus* ♀.
Fig. 11. *L. denticornis.*
Fig. 12. *Dysmerus basalis.*
Fig. 13. *Lathropus vernalis.*
Fig. 14. *L. pictus.*

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PLATE VIII.

Fig. 1. *Lathropus pubescens.*
1 *a.*—Antenna of same.
1 *b.*—Tarsus of *L. vernalis.*
Fig. 2.—*Dendrophagus glaber.*
2 *a.*—Anterior tarsus.
2 *b.*—Mandibles at tips.
2 *c.*—Maxillary palpus.
Fig. 3.—*Brontes dubius* ♀.
Fig. 3 *c.*—*B. truncatus* ♀.
3 *a.*—First joint of antenna.
3 *b.*—Posterior portion of elytra ♂.
3 *c.*—Mandible ♂.
3 *d.*—Scutellum.
Fig. 5. *B. debilis.*
5 *a.*—Tarsus.
5 *b.*—Maxillary palpus.
5 *c.*—First joint of antenna.
5 *d.*—Scutellum.
Fig. 4. *Telephanus velox.*
4 *a.*—Antenna.
4 *b.*—Tarsus.
4 *c.*—Maxillary palpus.
4 *e.*—Sculpture of elytra.
Fig. 6. *Hemipeplus marginipennis* ♂.
Fig. 6 *d.*—Same. ♀.
6 *a.*—Middle tarsus ♂.
6 *b.*—Antenna ♂.
6 *c.*—Front of head and labrum ♂.
6 *e.*—Basal joints of antenna ♀.
6 *f.*—Posterior tarsus ♀.
6 *g.*—Posterior ends of elytra ♀.
Fig. 7. *H. microphthalmus.*—Head.
7 *a.*—Posterior ends of elytra.
Fig. 8. *Cryptamorpha Desjardinsi.*
8 *a.*—Antenna.

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Synopsis of North American TRICHOPTERYGIDAE.

By Rev. A. Matthews, Gumley, England.

In the following synopsis I have included all the species which have hitherto been discovered throughout the whole continent of North America. Although the work has especial reference to the Trichopterygidæ of the United States, yet it is very probable that many of the tropical species will eventually occur in the more southern portions of that extensive region, and if this should happen, their descriptions will prove of much help to the student in recognizing his captures There can be no doubt but that the present list represents but a small part of the real number of American Trichopterygidæ, since seventy-six species have been found in Great Britain and Ireland, ninety-one, the number described in the following pages, can scarcely exceed a tenth part of those which inhabit the vast continent of North America.

The Trichopterygidæ are probably the most extensive Family of the whole Order of Coleoptera. In localities previously unexplored no one has ever paid even a moderate attention to their pursuit without discovering a multitude of unknown forms; every collection received from such quarters contains a vast majority of new species; indeed, in the aggregate of those which have come under my own notice, the average of new species would probably amount to four-fifths of the whole number.

To say, as has often been asserted, especially in the case of Col. Motschulsky, that species have been multiplied without sufficient grounds of distinction, is simply absurd, and only proves a total ignorance of the subject in question. Their specific difference is sufficiently obvious to any careful observer, even previously inexperienced in the investigation of Trichopterygidæ, to enable him to separate correctly, and arrange in species any miscellaneous mass of specimens. The truth of what I have just said was proved in a very striking manner not long ago. My lamented friend, Mr. Crotch, an ardent and very successful collector of Trichopterygidæ, left at his death a host of these insects, "rudis indigestaque moles," in a state of utter confusion; these were examined and arranged *in species* by Dr. LeConte and Dr. Horn, and subsequently transmitted to me for determination. I found them most accurately separated, and do not remember having detected a single error.

Since the greater part of this essay was written, many species have been added to the list by the recent discoveries of Messrs. Ulke, Cham-

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pion and others. The descriptions of these will be found in their proper places, but to the "Synoptic Tables" of Trichopteryx and Ptenidium I have added them as an appendix, being unwilling to upset the whole of the previous arrangement by the insertion of so many new species. The fact of these recent discoveries will also account for a want of uniformity among the descriptions; the species especially belonging to the United States I have described in detail, in Latin as well as English, but such as have been found only in Central America are merely characterized in a manner sufficient, I believe, to ensure their future identification.

The Tribes and Genera have been arranged in accordance with the new System of Classification, in which the Trichopterygidæ immediately follow the Staphylinidæ, and for that reason I have commenced with the Hydroscaphina. I feel convinced that Hydroscapha is merely a Tribe of Trichopterygidæ, and not a separate Family. In all its anatomy, and especially in the perfectly normal form of the wing, its affinity to the Trichopterygidæ is far too strongly marked to admit of its separation from that Family. The Trichopterygina naturally follow the Hydroscaphina, and the Ptiliina lead from them into other Clavicorn Families.

Synoptic Table of Tribes and Genera.

Habits aquatic.....**HYDROSCAPHINA.**
Habits terrestrial.
Elytra truncate.....**TRICHOPTERYGINA.**
Elytra entire.....**PTILIINA.**

Elytra truncate.....**TRICHOPTERYGINA.**
Antennæ very short, 9-jointed.....**Limulodes.**
Antennæ elongate, 11-jointed.
Pronotum widest at the base.
Base of pronotum arcuate.....**Myrmicotrichis.**
Base of pronotum not arcuate.
Ventral segments 7.....**Pteryx.**
Ventral segments 6.
Posterior coxæ very widely separated; mesosternum scarcely carinate.
Ptinellodes.*
Posterior coxæ moderately separated; mesosternum evidently carinate.
Trichopteryx.
Pronotum widest before the base.
Mesosternum carinate.....**Smicrus.**
Mesosternum not carinate.
Body opaque, abdomen moderate.....**Nephanes.**
Body translucent, abdomen very long.....**Ptinella.**

* In Ptinellodes the thorax of ♂ is dilated above the base.

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Elytra entire.....PTILIINA.
Pronotum widest at the base.
Pygidum invisible.....**Nossidium.**
Pygidium visible beyond the elytra.
Posterior angles of pronotum elongate.....**Throscidium.**
Posterior angles of pronotum not elongate.....**Nanosella.**
Pronotum widest before the base.
Base of pronotum fitted to the shoulders of the elytra.
Metasternum extending to the sides of the body.
Pygidium visible beyond the elytra.....**Ptilium.**
Pygidium invisible.....**Ptenidium.**
Metasternum not reaching the sides of the body.
Pronotum not constricted at the base.....**Motschulskium.**
Pronotum constricted near the base.
Pronotum very deeply sulcate.....**Millidium.**
Pronotum not sulcate.....**Mieridium.**
Base of pronotum superincumbent on the shoulders of the elytra.
Actidium.

TRICHOPTERYGIDÆ.

HYDROSCAPHINA.

HYDROSCAPHA.

LeConte Trans. Amer. Ent. Soc. 1874, p. 45.

BODY conic, very elongate.

ANTENNÆ very short, 8- or probably 10-jointed, apical joint alone incrassate, apparently composed of three amalgamated articulations.

HEAD sessile, deflexed.

PRONOTUM short, much dilated at the base.

ELYTRA truncate, very much attenuated towards the apex.

ABDOMEN very long, in form like *Tachyporus*, retractile, and therefore in dried specimens scarcely visible beyond the elytra.

MESOSTERNUM broadly carinated, carina anteriorly acuminate.

METASTERNUM large, transverse, not extending to the sides of the body.

VENTER 3 segments, apical segment deeply emarginate, containing a retractile laminated apparatus for swimming.

LEGS robust, posterior tarsi very long.

POSTERIOR COXÆ widely separated, broadly laminate.

H. natans LeConte, Trans. Amer. Ent. Soc. 1874, p. 45.—L. c. abdomen retracted, 1 mm.; abdomen extended, 1.75 mm.—Conic convex, very shining, piceous very sparingly clothed with short griseous hair; head large, rounded in front, eyes large, thorax short, transverse, rather longer and much broader than the head, widest at the base, marked with remote punctures, sides slightly rounded and narrowly margined, hinder angles almost right angles; elytra very convex, much attenuated towards the apex, rather wider and much longer than the head and

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thorax, widest near the shoulders, faintly asperate in transverse rows, sides slightly rounded, apex straight; abdomen very long, much attenuated towards the apex, 4—5 segments exposed, apex obtuse, rounded; legs and antennæ pale yellow, the latter very short, with the club dusky.

California (Crotch).

TRICHOPTERYGINA.

PTINELLA.

Motschulsky, Bull. Mosc. 18 p. 505, 1845.

BODY elongate, slender.

HEAD large, prominent, often long; eyes often wanting in ♂.

ANTENNÆ generally long and slender, each joint ornamented with long setæ, 11-jointed, 1–2 very large, 3–8 long and slender, 9–11 incrassate, forming an elegant moniliform club.

PRONOTUM small, transverse, generally more or less constricted towards the base.

SCUTELLUM triangular.

ELYTRA short, truncate.

ABDOMEN very long, with five or six segments exposed, apical segment often dentate.

MESOSTERNUM moderate, not carinated.

METASTERNUM large, extending to the sides of the body.

VENTER composed of six segments.

POSTERIOR COXÆ remote, narrowly laminated.

Synoptic Table of Species.

Elytra dilated towards the apex..... **pellucida.**
Elytra not dilated towards the apex.
  Length more than 1 mm..... **Championana.**
  Length less than 1 mm.
    Thorax not constricted near the base..... **Pini.**
    Thorax constricted near the base.
      Elytra shorter than the head and thorax, sculpture faint..... **Quercus.**
      Elytra longer than the head and thorax, sculpture deep..... **incerta.**

Pt. Championana n. sp.—L. c. 1.12 mm.—Elongate, oval; depressed, shining, translucent yellow, clothed with very short golden hair; head large, pointed in front; eyes small and prominent; thorax shorter, but rather broader than the head, widest at the middle, strongly and abruptly constricted at the base, ornamented with minute remote tubercles with the interstices smooth and shining, and generally with a broad irregular depression on the disk; sides margined much rounded anteriorly, and abruptly constricted near the base; basal margin nearly straight, with the angles acute, and very prominent; elytra short, much shorter, and not wider than the head and thorax, wider near the middle, moderately asperate in remote transverse rows, with the interstices smooth and shining, apex

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rounded; abdomen long, with five segments exposed; sides deeply margined, apex obtuse; legs and antennæ moderate, yellow.

Differs from *Pt. testacea* in its short and abruptly constricted thorax, very short elytra, and shorter legs and antennæ.

Hab.—"El Reposo," Guatemala, at an altitude of 800 feet, by Mr. Champion.

Pt. pellucida n. sp.—L. c. .63 mm.—Rather broad and depressed; moderately shining, ♂ yellow, ♀ castaneous, thickly clothed with pale hairs; head large, rounded in front, ♀ eyes large and prominent, ♂ eyes wanting; thorax small, transverse, much shorter, and not wider than the head, widest near the middle, ornamented with large tubercles in transverse rows; sides strongly margined, rounded anteriorly, and contracted towards the base. hinder angles right angles; on the disk are two indistinct impressions; elytra short. not wider or longer than the head and thorax, widest at the apex, deeply asperate in straight transverse rows; sides margined, nearly straight, apex broad, and very much rounded; abdomen broad, five segments exposed. apical segments acuminate; legs and antennæ long and robust, yellow.

Differs from the other species in its elytra dilated at the apex, and broad abdomen.

Guatemala (Champion).

Pt. Pini LeConte Smiths. Misc. Coll. i. p. 62, 1866.—L. c. .63—.75 mm.—Elongate narrow, ♂ pale yellow, rather thickly clothed with golden hair; head rather long, rounded in front; eyes ♂ wanting; thorax small, shorter and scarcely broader than the head, rather remotely and faintly tuberculate; sides moderately rounded, contracted towards the base: hinder angles nearly right angles; elytra short and narrow, shorter and not wider than the head and thorax, remotely and faintly asperate; sides nearly parallel, apex slightly rounded; abdomen long, six segments exposed, apical segment acute; legs and antennæ long, robust, pale yellow.

Differs from *Pt. pellucida* in its narrow shape and long pointed abdomen; ♀ has not yet been found.

United States (Dr. LeConte).

Pt. Quercus LeConte Smiths. Misc. Coll. i, p. 63, 1866.—L. c. .50—.63 mm.—Moderately elongate, narrow, ♂ pale yellow, ♀ more or less castaneous, sparingly clothed with pale hair; head very large, much rounded in front; eyes ♀ rather large, ♂ wanting; thorax rather wider, but not longer than the head, widest before the middle, alutaceous, scarcely tuberculate; sides slightly margined, widest before the middle, and constricted towards the base, hinder angles acute; elytra short, shorter and rather narrower than the head and thorax, widest towards the apex, remotely and deeply asperate, apex broad, almost straight; abdomen rather long, and rather obtuse, five segments exposed; eyes and antennæ robust, pale yellow.

Differs from the others in its smaller size, large head, constricted thorax and shorter elytra. *P. nigrovittis* LeConte is the ♀ of this species.

United States (Dr. LeConte and Motschulsky).

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Pt. incerta n. sp.—L. c. .87 mm.—Elongate, narrow, convex, shining, sparingly clothed with very short yellow hair; head rather long, obtuse in front; eyes placed far back, rather large and prominent; thorax small, rather wider, but not longer than the head, widest near the middle, strongly constricted near the base, coarsely tuberculate, with an oval impression on each side near the scutellum; sides margined, rounded in front, and constricted near the base; basal margin nearly straight, with the angles acute and prominent; elytra long and narrow, sub-parallel; longer, but scarcely broader than the head and thorax; convex, shining, closely and coarsely asperate; apex much rounded, concolorous, with the edge white; abdomen with four segments exposed with the apical and half of the penultimate segment yellow, apex acute; legs and antennæ long and yellow.

Differs from other species in its narrow sub-parallel form, strongly constricted thorax, dark castaneous color and deep sculpture.

Hab.—San Geronimo, Guatemala, at an altitude of 3000 feet, Mr. Champion.

Obs.—I feel doubtful whether this insect is a true Ptinella; it differs much from the more normal species in its convex and corneous integument, but as far as I have been able to discover it does not present any anatomical difference.

CHAMPIONELLA n. g.

ANTENNÆ 11-jointed, 1–2 large cylindrical, 2 rather larger than 1, 3–7 nearly equal, 8 longer, and somewhat incrassated, 9–11 incrassated, gradually increasing in length and breadth.

PALPI MAXILLARY rather large, 4-jointed, penultimate joint longer than the preceding, cyathiform, terminal joint acicular long and sinuated.

LABIAL 3-jointed, short and robust, 2 narrower than 1, with a long divergent setæ at the exterior apical angle, 3 ovate.

LINGUA broad, with the apex obtuse and dentate.

LABIUM moderate, with the apical margin concave, paraglossæ almost rudimentary.

MENTUM rather large, oblong, with the sides slightly concave, with two small setæ near each anterior angle.

MANDIBLES rather large and robust, with the apex acute, slightly hooked, minutely dentate on the back. *Lamella membranacea* small, nearly circular. *Stipes* large, produced into a long, very acute, curved process behind the mandible, and furnished with a small sinuated process near the base.

MAXILLA 3-lobed, *outer lobe* corneous, formed by a long, pointed, incurved process of the stipes; *middle lobe* coriaceous, short and broad, 2-jointed, furnished at the apex with a long brush of strong setæ; *inner lobe* corneous, large and robust, armed at the apex with three long and strong incurved teeth.

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LABRUM large, semi-oval, constricted before the middle, with three setæ on each side below the middle, and a curved row of smaller setæ towards the apex.

HEAD moderate, prominent.

PRONOTUM rather small, not constricted.

ELYTRA very short, abruptly truncate; *epipleura* largely developed.

ABDOMEN robust, pointed at the apex, with four long segments fully exposed.

PROSTERNUM moderate, falcate; *episterna* distinct, very small; *epimera* rather large; *coxal cavities* contingent, enclosed behind.

MESOSTERNUM large, minutely carinate; *episterna* not reaching the shoulders; *epimera* very large and broad, reaching to the coxal cavities.

METASTERNUM large, extending to the sides; *episterna* and *epimera* covered by the epipleura, posterior extremity of the latter only visible.

VENTER composed of seven segments, 1 twice as long as 2, 2–7 equal, apex pointed.

LEGS rather long; femora, especially the posterior, robust; tibiæ slightly dentate on the inner edge, tarsi 3-jointed, basal joint much larger than the second, third long and slender, claws rather long and slender.

COXÆ ANTERIOR nearly circular, contingent.

INTERMEDIATE oval, separated by the carina.

POSTERIOR rather small, prominent, widely distant, not laminated.

C. nubigena n. sp.—L. c. .53—.75 mm.—Elongate, oval; very convex, shining, dark castaneous, sparingly clothed with silvery hair; head prominent, rather long, labrum and palpi yellow; eyes small, not prominent; thorax rather larger and wider than the head, widest near the middle; very shining, closely and finely tuberculate, or alutaceous; sides rounded, faintly margined, basal margin nearly straight, with the angles obtuse; elytra short, shorter, but rather wider than the head and thorax, widest behind the middle, rather deeply and remotely asperate, with the interstices strongly reticulate; sides rounded, apex very broad, nearly straight; abdomen conic, rather acute, with four segments fully exposed, pale towards the apex; legs rather long, bright yellow; antennæ moderate, dusky yellow.

Apart from its anatomical differences this insect may be known from any species of *Ptinella* by its convex and corneous integument; and the abrupt truncation of the elytra.

This curious species was found by Mr. Champion on "Totonicapam" in Guatemala, at an altitude of 10,500 feet.

From *Ptinella* this genus may be known by the very diverse form of the antennæ; hard, corneous and convex integument, abrupt and straight truncation of the elytra, and by the seven ventral segments of the abdomen.

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PTERYCODES n. g.

ANTENNAE 11-jointed, 1–2 very large, 2 rather smaller than 1, constricted near the apex, 3–8 very long and slender, constricted near the base and apex, 9 faintly incrassate, 10 much longer and wider than 9, largely incrassate at the base, and very slender towards the apex, 11 much longer and wider than 10, obtusely conic, the three terminal joints ornamented with a score of rather short setæ.

PALPI, MAXILLARY rather small, 4-jointed, penultimate joint ovate, truncate, terminal long, acicular and sinuated, with a long seta on each side before the middle.

LABIAL very large and long, 3-jointed, basal joint very large, cylindric, 2 also cylindric, but more than twice smaller than the preceding, 3 much shorter and smaller than 2, acutely conic.

LINGUA long and narrow, concave in the middle, and produced on each side near the exterior angle into a short aciculated point, with a short divergent seta on each exterior angle.

LABIUM rather large with the anterior edge nearly straight; paraglossæ robust, erect, acute, with a long divergent seta on the outer side near the apex.

MENTUM oblong, with two strong setæ on the outer side of each anterior angle.

MANDIBLES moderate, rather hooked, moderately dentate at the back. *Lamella membranacea* moderate, almost circular. *Stipes* rather small, produced into a long, robust, curved process behind the mandible.

MAXILLÆ 3-lobed, *outer* lobe corneous, formed by a long, robust, pointed process of the stipes; *middle* lobe coriaceous, 2-jointed, furnished at the apex with a brush of long, strong, setæ; *inner* lobe corneous, placed much below the middle lobe, rather small, armed at the apex with five or six sharp curved teeth.

LABRUM rather large, semi-oval, slightly constricted before the middle with three strong setæ on each side, and a curved row of smaller setæ beyond the middle of the disk.

HEAD large and prominent.

PRONOTUM large, slightly constricted near the base.

SCUTELLUM triangular.

ELYTRA rather long, truncate.

ABDOMEN moderately long, with three segments exposed.

PROSTERNUM moderate, falcate; *episterna* small, distinct; *epimera* rather large; coxal cavities broadly enclosed behind.

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MESOSTERNUM rather large, slightly carinate, carina produced between the coxal cavities; *episterna* large, humeral; *epimera* very large and broad, reaching the coxal cavities.

METASTERNUM rather short, not extending to the sides; *episterna* large and broad, not reaching to the coxæ; *epimera* very large and broad, reaching to the venter; coxæ very widely separated.

VENTER composed of six segments, with the basal and apical segments longer than the rest.

LEGS long and robust, tarsi 3-jointed, with the basal joint twice as large as the second, terminal joint long and slender, claws long and slender; posterior tibiæ dentate on the inner edge with two strong spurs near the apex.

COXÆ ANTERIOR contingent.

INTERMEDIATE separated by the carina.

POSTERIOR large and very prominent, very widely separated, broadly laminated on the exterior margin, lamina triangular.

This genus seems intermediate between *Pteryx* and *Ptinella;* from the former it differs in having six ventral segments, and in the wide separation of the posterior coxæ; from the latter in the length of the elytra, and from both in the small size of the ninth joint of the antennæ, the long and peculiarly formed labial palpi, the diverse form of the maxillæ and small size of the maxillary palpi, the metasternum not reaching the sides of the body, and in the broadly laminated posterior coxæ.

P. Salvinii n. sp.—L. c. .87—1 mm.—Sub-ovate, very convex, shining, translucent castaneous, thickly clothed with very short golden hair; head large and broad, prominent, mouth yellow; eyes large, and rather prominent; thorax moderate, rather wider but not longer than the head, widest near the middle, constricted near the base, regularly marked with foveolate punctures, interstices alutaceous; sides anteriorly rounded and very broadly margined, near the base constricted, and not margined, basal margin slightly sinuated, with the angles acute and prominent; elytra ovate, translucent, antennæ longer, but scarcely wider than the head and thorax, widest near the middle, covered with deep, remote, asperated punctures in curved rows, the interstices finely alutaceous; sides rounded, slightly margined, apex broad and much rounded; abdomen convex, with three segments exposed, the two last segments yellow; eyes and antennæ long and slender, bright yellow.

Two specimens of this beautiful species were found by Mr. Champion on Cerro Tunil, in Guatemala, at an altitude of from 4000 to 5000 feet.

PTERYX.

Matthews, Zool., p. 6017, 1858.

ANTENNÆ 11-jointed, each joint furnished with a whorl of long setæ, three last joints very much incrassated, forming an elegant moniliform club.

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HEAD large and prominent.
PRONOTUM moderate, generally sub-quadrate.
ELYTRA truncate.
ABDOMEN rather long, 4 or 5 segments exposed.
MESOSTERNUM shortly carinated.
METASTERNUM moderate, extending to the sides of the body.
VENTER 7 segments.
POSTERIOR COXÆ moderately distant, and moderately laminated, lamina rather acuminate.

Synoptic Table of Species.

Thorax with the sides widest at the base ..... **brunnea.**
Thorax with the sides widest before the base.
Thorax with the sides slightly rounded ..... **balteata.**
Thorax with the sides strongly rounded ..... **Du Valii.**

P. brunnea LeConte, Smiths. Misc. Coll. I, p. 62, 1866.—L. c. .75—.87 mm.—Oblong, oval, moderately convex, shining, dusky, castaneous; sparingly clothed with golden hair; head large, rather long; eyes small, placed far back; thorax moderate, transverse, broader and rather longer than the head, widest at the base, deeply marked with large foveolate punctures; sides broadly margined and slightly rounded, hinder angles rather obtuse; elytra oblong, eval, longer and narrower than the head and thorax, widest before the middle, very deeply and irregularly asperate, apex moderately rounded; abdomen rather long, obtuse; legs and antennæ long and slender, bright yellow.

Differs from the other species in its larger size, and deeply punctured thorax, widest at the base.

United States (Dr. LeConte).

P. balteata LeConte, Smiths. Misc. Coll. I, p. 62, 1866.—L. c. .50—.63 mm.—Oval, convex, shining, bright yellow, sparingly clothed with short, pale hair; head large, elongate, rounded in front; eyes very small; thorax moderate, rather longer and wider than the head, widest at the middle, closely and faintly tuberculate; sides rounded and broadly margined, hinder angles obtuse; elytra short, quadrate, scarcely wider or longer than the head and thorax, remotely asperate; sides nearly straight, apex broad, scarcely rounded; abdomen rather long and slender, bright yellow.

Differs from others in its small size, short and broad form, short quadrate elytra, and general sculpture.

United States (Motschulsky).

P. Du Valii Matthews, Trich. Illust. p. 164, 1872.—L. c. .87 mm.—Oblong, oval, moderately convex, shining, dusky, castaneous, sparingly clothed with short golden hair; head large, rounded in front; eyes rather large and prominent; thorax moderate, transverse, rather longer than the head, widest at the middle, ornamented with small, remote tubercles; sides much rounded and broadly margined, hinder angles almost right angles; elytra oblong, longer but not wider than the

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head and thorax, very deeply and remotely asperate; sides straight, apex moderately rounded; abdomen rather long, pale yellow; legs and antennæ moderate, pale yellow.

Differs from others in the rounded shape of the thorax, and in the general sculpture.

United States (Dr. LeConte).

PTINELLODES.

Matthews Trich. Illust. p. 150, 1872.

ANTENNÆ 11-jointed, long and very slender, each joint ornamented with a whorl of long setæ, the three last moderately incrassate, forming an elongate moniliform club.

HEAD large, rather prominent.

PRONOTUM moderate, dilated at the base ♀, near the middle ♂.

ELYTRA truncate.

ABDOMEN rather long, with two short spines at the apex.

MESOSTERNUM scarcely carinated.

METASTERNUM short, extending to the sides of the body.

VENTER 6 segments.

POSTERIOR COXÆ very remote, slightly laminated.

P. LeContei Matthews, Trich. Illust. p. 160, 1872.—L. c. 1 mm.—Oblong, elongate, moderately convex, translucent yellow, sparingly clothed with short golden hair; head large and prominent; eyes wanting ♂, or small and prominent ♀; thorax moderate, rather longer, and wider than the head, widest near the middle ♂, or at the base ♀, alutaceous ornamented with minute, remote, equidistant tubercles; sides broadly margined, much rounded in ♂, hinder angles acute and moderately produced; elytra oblong, longer and rather narrower than the head and thorax, remotely and faintly asperate; sides nearly straight, apex scarcely rounded; abdomen rather long, 4 segments exposed, apical segment long, with an acute tooth on each side at the apex; legs and antennæ very long and slender, pale yellow.

United States (Dr. LeConte).

LIMULODES.

Matthews Ann. Lyc. Nat. Hist. New York, 8, p. 409, 1867.

Body conic, widest in front.

ABDOMEN very short, robust, 9-jointed, 1 and 2 very large, 3–6 very small (the third joint appears to be an amalgamation of three joints), 7–9 very large and much incrassate, forming an elongate club.

HEAD small, deflexed, completely received in a cavity of the prothorax.

PRONOTUM very large and very convex, circularly rounded in front, hinder angles acute and slightly produced.

ELYTRA truncate, short and much attenuated towards the apex.

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ABDOMEN short, part of three segments exposed, apex deeply bifid, covered with very long golden hair.

PROSTERNUM large, produced posteriorly into a very long and broad plate extending more than half over the metasternum, deeply bifid at its extremity.

MESOSTERNUM strongly carinated, carina produced posteriorly into a broad spoon-shaped process covering the posterior coxæ.

METASTERNUM very short, extending to the sides of the body.

VENTER 6 segments, apical segment large, deeply bifid, and longitudinally sculptured.

LEGS very short and compressed, tarsi very small, and the femora broadly laminated.

POSTERIOR COXÆ moderately distinct, very small and linear, furnished posteriorly with an immense quadrate lamina.

L. paradoxus Matthews Ann. Lyc. Nat. Hist. New York, 8, p. 409, 1867.—L. c. .87—1 mm.—Conic, widest in front, very convex, shining, rufo-testaceous, thickly covered with a sericeous silvery pubescence; head small, eyes wanting; thorax very large and very convex, widest at the base, alutaceous; sides circularly rounded, posterior very acute and slightly produced; elytra connate, attenuated, shorter and narrower than the head and thorax, widest at the shoulders, elegantly and reticulately asperated, apex broad, scarcely rounded; abdomen moderately exserted, three segments exposed, thickly covered with long golden hair extending beyond the apex of the abdomen, apical segment long, deeply bifid; legs and antennæ very short, rufo-testaceous.

United States. In ants' nests.

MYRMICOTRICHIS.

Motschulsky Bull. Mosc. 41, p. 181, 1868.

BODY sub-ovate.

ANTENNÆ 11-jointed, the three last joints moderately incrassate, forming a moniliform club.

HEAD rather deflexed.

PRONOTUM much dilated at the base, with the hinder angles exceedingly produced.

ELYTRA truncate, rather long.

ABDOMEN long and much exposed.

MESOSTERNUM large, much carinated.

METASTERNUM moderate, extending to the sides of the body.

VENTER 6 segments.

LEGS rather short, tibiæ compressed.

POSTERIOR COXÆ moderately distant, broadly laminated.

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M. æquatorialis Motschulsky Bull. Mosc. 41, p. 182. 1868.—L. c. .75 mm. —Sub-ovate, very connex, and very shining, translucent yellow, very sparingly clothed with short golden hair; head large and broad; eyes very small; thorax large, much wider and longer than the head, widest at the base, closely ornamented with minute tubercles in transverse wavy rows; sides rounded and broadly margined, basal margin strongly arcuate with the angles, very acute, and excessively produced, extending to one-quarter of the elytra; elytra rather long and narrower, much attenuated towards the apex, narrower and rather longer than the head and thorax, rather closely and deeply asperate in transverse oblique rows; sides rather contracted towards the middle, apex scarcely rounded; abdomen elongate, robust, bright yellow.

Central America (Motschulsky).

TRICHOPTERYX.

Kirby and Spence Int. to Ent. 3, p. 40, 1819.

BODY generally oblong, or ovate.

ANTENNÆ 11-jointed, the three last incrassate, forming a moniliform club.

HEAD large, rather deflexed.

PRONOTUM generally dilated towards the base, with the hinder angles often much produced.

ELYTRA truncate, generally short.

ABDOMEN moderate, 3 to 5 segments exposed, generally dentate at the apex.

MESOSTERNUM carinated, carina acute at both extremities.

METASTERNUM moderate, extending to the sides of the body.

VENTER 6 segments, apical segment often incised near the extremity.

LEGS moderate, anterior and intermediate tarsi often have basal joints dilated.

POSTERIOR COXÆ rather distant, with the exterior edge broadly laminate.

Synoptic Table of Species.

Thorax evidently wider, or much wider than the elytra.
- Thorax smooth, nearly impunctate.
  - Elytra strongly attenuated ..... **Schaumii.**
  - Elytra not attenuated ..... **glabricollis.**
- Thorax evidently tuberculate.
  - Head and thorax black, elytra castaneous.
    - Form elongate posteriorly, thorax much dilated.
      - Size large, abdomen black ..... **Haldemanni.**
    - Form short and broad.
      - Elytra convex ..... **Dohrnii.**
      - Elytra depressed ..... **discolor.**
    - Form oblong, thorax widest near the middle ..... **similior.**

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Head, thorax and elytra, castaneous.....**Crotchii.**
Entirely black, or fuscous black.
Form exceedingly convex.
Size very large, no lateral setæ.....**Godmanni.**
Size moderate, with erect lateral setæ.....**grossa.**
Form moderately convex.
Thorax widest before the middle.
Elytra long and parallel.....**crassicollis.**
Elytra short and rounded.....**abrupta.**
Thorax widest at the base.
Antennæ yellow.
Elytra short and fuscous.
Abdomen black.....**atomaria.**
Abdomen pale.....**rufescens.**
Elytra black, not short.
Elytra attenuated.
Thorax very broad.....**laticollis.**
Thorax moderate.
Antennæ dusky yellow.....**cognata.**
Antennæ bright yellow.....**fascicularis.**
Elytra not attenuated.
Elytra with strong erect setæ.....**minor.**
Elytra without lateral setæ.....**sitkaensis.**
Antennæ black, or pitchy black.
Hinder angles of thorax dilated laterally.....**Henrici.**
Hinder angles of thorax moderate laterally.
Antennæ short.....**Josephi.**
Antennæ long.....**diffinis.**
Thorax scarcely wider than the elytra, hinder angles of thorax acute, often produced.
Entirely castaneous.
Hinder angles of the thorax not produced.
Form oblong.....**ambigua.**
Form thorax and elytra dilated in middle.....**bidilatata.**
Hinder angles of the thorax much produced.
Thorax widest at the base.....**Californica.**
Thorax widest before the base.....**castanea.**
Head and thorax black, elytra rufous.
Form broad, quadrate.....**xanthocera.**
Form moderate, oblong.
Abdomen castaneous.....**brevior.**
Abdomen black.....**parallela.**
Entirely black, or fuscous black.
Antennæ black.
Form long and parallel, size large.....**parallelopipeda.**
Form short, size moderate.
Elytra widest at the apex.....**aspera.**
Elytra, with the sides, nearly straight.
Thorax widest at the base, deep black.....**vicina.**
Thorax widest before the base, fuscous black.....**sericans.**
Antennæ yellow.

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Thorax widest near the middle..... **Hornii.**
Thorax widest at the base..... **nigrita.**
Thorax not wider than the elytra, hinder angles of the thorax not acute.
mœrens.

Species added to the foregoing by Mr. Champion's more recent discoveries in Central America:

T. Alliberti, distinguished by its broad head and thorax, attenuated elytra, and erect setæ on the thorax and elytra.

T. lucida, distinguished by its shining, translucent surface and largely dilated thorax.

T. glauca, distinguished by its small size and dense glaucous pubescence.

T. angustipennis, distinguished by its broad thorax and narrow oblong elytra.

T. excelsa, distinguished from *T. abrupta* by its shining surface and remote sculpture.

T. graudicollis, distinguished by its usually æneous color and erect setæ on the thorax and elytra.

T. vitrea, distinguished from all by its translucent and very shining surface, short rounded form, and small size.

T. Aubei, distinguished by its elongate shape and rufo-brunneous color.

T. Schaumii Matthews Ann. Mag. Nat. Hist. 17, p. 143, 1866.—L. c. 1 mm. —Elongate, very much attenuated posteriorly, very convex, and very shining, rufo-castaneous, very sparingly clothed with short griseous hair; head moderate rather long; eyes moderate slightly prominent; thorax rather short, and very broad, very convex, smooth and shining, rather longer, and much broader than the head, widest near the base; sides broadly margined, and very much rounded, basal margin arcuate, with the angles broad, acute and excessively produced, extending about one-quarter of the length of the elytra; elytra short, very convex, and very much attenuated, shorter and much narrower than the head and thorax, widest at the shoulders, translucent, faintly and remotely asperate; sides slightly rounded and margined, apex nearly straight, abdomen much attenuated and elongate, with five segments exposed; legs long, bright yellow, antennæ long and slender, bright yellow.

This remarkable species differs from all others in its broad head and thorax, exceedingly long hinder angles of the latter, small, narrow and translucent elytra, elongate and attenuated abdomen, and shining, castaneous color.

A single example found in Louisiana (Dr. Schaum).

T. Haldemanni (LeConte) Motschulsky Bull. Mosc. 41 p. 177, 1868.—L. c. 1—.12 mm.—Rather elongate, very convex and shining; head and thorax black, rufo-castaneous, very sparingly clothed with short, pale hair; head very large and very broad; eyes small, not prominent; thorax large, wide and very convex, depressed at the base, much longer and broader than the head, widest before the base, ornamented with small, rather remote tubercles, regularly and elegantly arranged in nearly straight transverse rows; sides very much rounded and moderately margined, hinder angles broad, acute and much produced; elytra attenuated

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posteriorly ♂, as long as, but narrower than, the head and thorax; rather deeply, closely and irregularly asperate; sides slightly rounded, apex nearly straight; abdomen long, rather attenuated towards the apex, black; legs and antennæ rather long, bright yellow.

Differs from other species in its large and elongate form, broad head and thorax, and peculiar sculpture.

United States.

T. Godmanni Matthews n. sp.—L. c. 1.87—2 mm.—Very broad and very convex, very shining, black, clothed with short silvery hair; head moderate; eyes rather small; thorax very large, and very convex, much dilated posteriorly, widest at the base, closely covered with minute tubercles in irregular rows; sides rounded and slightly margined, hinder angles pale, broad and much produced; elytra fuscescent, rather short, nearly as long as, but rather narrower than, the head and thorax, much attenuated posteriorly, closely and finely asperate in nearly straight transverse rows; sides nearly straight, apex broad, slightly rounded, pale, with the edge white; abdomen much exserted, obtuse; legs robust, bright yellow, with the anterior tibiæ and basal joints of the tarsi dilated, antennæ moderate, dusky yellow.

Differs from all others in its very large size, very broad and convex shape, and in the general sculpture.

Vera Paz (Champion).

T. grossa Motschulsky Bull. Mosc. 41 p. 170, 1868.—L. c. 1—1.12 mm.—Exceedingly broad and convex, shining, black, clothed with griseous hair; head large and broad; eyes moderate, thorax very large, very convex and shining, much dilated posteriorly, longer and much broader than the head, widest at the base, ornamented with minute and remote tubercles, the interstices shining; sides rounded and broadly margined with a strong erect black setæ on each side near the base, hinder angles wide and much produced, pale; elytra fuscescent, short and much attenuated posteriorly, shorter and rather narrower than the head and thorax, widest at the shoulders; sides nearly straight, with a strong erect black setæ on each side near the shoulder, and another towards the apex, finely and closely asperate in transverse rows, apex broad, nearly straight, pale; abdomen moderate; legs robust, dusky yellow, antennæ long, slender, dusky testaceous.

Differs from others in its large size, short convex form, large shining thorax, long antennæ, and erect black setæ.

Central America (Motschulsky and Champion).

T. Alliberti Matthews Trich. Illust. p. 139.—L. c. 1.12 mm.—Broad, very convex, black, rather shining, thickly clothed with short gray hair; head very large and broad; eyes moderate; thorax very large and very broad, very convex, much dilated posteriorly, widest near the base, ornamented with rather large tubercles in close sinuated rows with the interstices reticulate, with a strong erect black setæ on each side near the middle; sides rounded and strongly margined, basal margin depressed, sinuated, and slightly depressed, with the angles much produced and acute; elytra moderate, much attenuated posteriorly, narrower and scarcely longer than the head and thorax, with a strong erect black setæ on each side near the shoulder, and another behind the middle, closely but rather lightly

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asperate; sides nearly straight, suture rather elevated towards the apex; apex nearly straight, pale, with the edge white; abdomen black, not much exserted; legs and antennæ slender, bright yellow.

Differs from other species in its large size, very broad head and thorax, attenuated elytra, erect setæ and general sculpture.

Hab.—Central America, found by Mr. Champion near "Las Mercedes," at an elevation of 3000 feet.

T. lucida n. sp.—L. c. .87 mm.—Rather short and broad, much attenuated posteriorly, very convex and very shining, translucent castaneous, clothed with rather long golden hair; head rather large, produced in front; eyes large and very prominent; thorax large, much dilated posteriorly, longer and wider than the head, widest at the base, ornamented with minute remote tubercles, with the interstices smooth and very shining; sides strongly margined and slightly rounded, basal margin arcuate, with the angles acute and very much produced, pale; elytra short, narrower, and not longer than the head and thorax, widest at the shoulders, much attenuated posteriorly, faintly and irregularly asperate, apex broad and much rounded; abdomen very little exposed, testaceous; legs rather short, bright yellow; antennæ long and very slender, pale yellow.

This very pretty species may be known by its very shining and translucent surface, pale and slender antennæ, testaceous underside, and general sculpture.

Hab.—Central America, found by Mr. Champion on "Cerro Tunil," at an altitude of 4000 to 5000 feet.

T. glabricollis Matthews Ann. and Mag. Nat. Hist. 17 p. 143, 1866.—L. c. .87 mm.—Very short and broad, very convex shining, dark castaneous, sparingly clothed with very short pale hair; head very large and broad, smooth and shining; eyes small; thorax very large and broad, very smooth and shining, longer and wider than the head, widest before the base: sides much rounded and widely margined, basal margin reflexed, hinder angles broad and much produced, pale; elytra rufescent, very short, shorter and narrower than the head and thorax, widest behind the middle, faintly and remotely asperate; sides broadly margined and much rounded posteriorly, apex scarcely rounded, pale; abdomen moderate, castaneous; legs and antennæ rather short and slender, bright yellow.

Differs from all others in its very short and broad form, very convex, smooth and shining thorax, elytra widest behind the middle, and short slender legs and antennæ.

United States (Dr. Schaum).

T. Dohrnii Matthews Trich. Illust. p. 144, 1872.—L. c. .87 mm.—Rather short, convex; head and thorax black; elytra rufo-testaceous, clothed with sericeous golden pubescence; head rather prominent, shining; eyes large, rather prominent; thorax large, much dilated posteriorly, much longer and wider than the head, widest at the base, ornamented with small remote tubercles in transverse wavy rows, interstices very shining, depressed at the base; sides rather abruptly rounded near the base, hinder angles much produced, acute and broadly flavescent;

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elytra flattened posteriorly, not longer and much narrower than the head and thorax, moderately asperate in rather distant rows; sides slightly sinuated, apex almost straight; abdomen moderate black; legs and antennæ bright yellow, the latter long and slender.

Differs from *T. cursitans* Niet. in its smaller size, thorax rather abruptly dilated near the base, and sinuated sides of the elytra.

United States (Dr. Schaum).

T. similior Matthews n. sp.—L. c. .75—.87 mm.—Rather short, slightly attenuated posteriorly, convex, rather shining; head and thorax black; elytra rufous, sparingly clothed with short pale hairs; head very large, much rounded in front; eyes large, not prominent; thorax moderate, longer and rather broader than the head, widest before the base, dilated posteriorly in the males, ornamented with moderate, rather remote tubercles, with the interstices strongly reticulated and shining; sides rounded and margined, basal margin sinuated, with the angles moderately produced and pale; elytra sub-quadrate, rather shorter and not wider than the head and thorax, moderately asperate in remote wavy rows, apex broad, nearly straight; abdomen much exposed, attenuated towards the apex, apex tridentate; legs and antennæ moderate; dusky yellow.

Differs from *T. discolor* in its smaller size, more convex form, less dilated and more faintly sculptured thorax, oblong and attenuated elytra. The female is smaller and more oblong in form than the male.

Hab.—Rio Nananja and other parts of Central America (Mr. Champion).

T. discolor Haldeman Journ. Acad. Nat. Sc. Philadelphia, p. 108, 1852.—L. c. .75—.87 mm.—Sub-ovate, rather convex, shining, black, with the elytra testaceous, sparingly clothed with fulvous hair; head large, rather prominent; eyes large; thorax moderate, much broader and longer than the head, widest near the base, ornamented with rather large tubercles in wavy rows, interstices shining, black, with all the margins yellow; sides moderately rounded, hinder angles pale and much produced; elytra testaceous, short, depressed, attenuated posteriorly in the ♂, rather shorter and narrower than the head and thorax; sides nearly straight, closely but irregularly asperate, apex broad, scarcely rounded; abdomen black, considerably exserted; legs and antennæ moderate, bright yellow.

Differs from other species in its depressed testaceous elytra and sculpture.

United States (Haldeman), Brazil (Dr. Schaum).

T. Crotchii Matthews Ent. Mon. Mag. 1 p. 248, 1865. - L. c. .75 mm.—Short, broad, convex, shining, castaneous brown, clothed with pale hairs; head large, shining; eyes moderate; thorax large, very convex, much broader and longer than the head, widest at the base ornamented with very minute tubercles closely placed in remote transverse rows; sides margined and much rounded, hinder angles much produced and pale; elytra rather rufescent, much attenuated posteriorly, shorter and narrower than the head and thorax, faintly and remotely asperate, apex nearly straight; abdomen rather long, black; legs and antennæ bright yellow, the club of the latter much incrassated.

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Differs from other species in its short attenuated form, castaneous color, peculiar sculpture of the thorax, and largely incrassated club of the antennæ.

Central America (Motschulsky and Champion).

T. rufescens Matthews n. sp.—L. c. .87 mm.—Ovate, very convex, shining, head and thorax black, elytra rufofuscous, clothed with short flavescent hair; head large; eyes large and prominent; thorax very large, dilated at the base, longer and much wider than the head, widest at the base, rather closely covered with distinct tubercles, interstices shining; sides rounded and strongly margined, hinder angles broad and much produced; elytra short, much attenuated posteriorly, rufous brown, not longer and rather narrower than the head and thorax, closely but rather faintly asperate; sides nearly straight, apex much rounded, pale, with the edge white; abdomen moderate, rufous brown; legs very robust, bright yellow, with the basal joints of all the tarsi dilated: antennæ rather slender, yellow.

Differs from others in its convex and attenuated form, rufous brown elytra and abdomen, bright yellow legs and antennæ.

Vera Paz (Champion).

T. atomaria Dr. Geer Mem. Hist. des Ins. 4 p. 218, 1774.—L. c. .75—.87 mm. —Short and broad, very convex, pitchy black, shining, densely clothed with rather long fulvous hair; head large and prominent; eyes moderate; thorax very large and very convex, longer and much wider than the head, widest at the base, ornamented with small remote tubercles, with the interstices very shining; sides margined and rounded, hinder angles very much produced, broadly flavescent; elytra short, fuscescent, posteriorly attenuated in ♂, nearly quadrate in ♀, narrower, but rather longer than the head and thorax, deeply asperate in transverse rows, apex oblique, slightly rounded, apex broadly, and sometimes the sides, flavescent; abdomen rather long, obtuse; legs and antennæ bright yellow, femora rather dusky.

Differs from others in its short form, large thorax, widest at the base, and in sculpture.

United States.

T. glauca Matthews n. sp.—L. c. .75 mm.—Rather short, male much attenuated posteriorly; female oblong, convex, not shining, castaneous brown, thickly covered with short, sericeous, glaucous hair; head large and broad; eyes not prominent; thorax large, much dilated posteriorly in the male, much longer and wider than the head, widest at the base, thickly covered with small tubercles in close wavy rows, interstices smooth; sides moderately rounded, scarcely margined, basal margin sinuated, with the angles broad, very acute and much produced; elytra sub-quadrate, rather narrower, not longer than the head and thorax, widest at the shoulders, closely and deeply transversely asperate; sides nearly straight, apex rounded, broad and pale, with the edge white; abdomen considerably exserted, ferruginous, apex distinctly bidentate; legs robust, bright yellow; antennæ very slender, pale yellow.

Differs from other species in its rufo-glaucous color, dense sericeous pubescence, slender antennæ, and very close sculpture. The female is more oblong in form than the male.

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Hab.—Central America, found near Bugaba, Panama, by Mr. Champion.

T. laticollis Mannerheim Bull. Mosc. 25 p. 283, 1852.—L. c. 1.12 mm.—Oblong, very convex, deep black, clothed with silvery hair; head large and broad, shining; eyes small, not prominent; thorax large, very convex, much wider and longer than the head, widest at the base, ornamented with small, distinct tubercles, regularly arranged; sides slightly rounded and margined, hinder angles broad, acute, produced and black; elytra slightly attenuated posteriorly; longer, but not wider than the head and thorax, faintly and remotely asperate in transverse rows; sides nearly straight, apex nearly straight; abdomen not much exserted; legs and antennæ long, yellow, the latter rather dusky, anterior tarsi, with the basal joint, slightly dilated.

Differs from others in its large size, long and attenuated elytra, deep black color, and sculpture.

California (Mäklin).

T. angustipennis Matthews n. sp.—L. c. 1 mm.—Sub-oblong, with the thorax very broad, very convex, shining, dull black, clothed with yellow hair; head large; eyes large, not prominent; thorax large, much dilated laterally, much longer and wider than the head, widest near the middle, ornamented with large tubercles in irregular rows, with the interstices smooth and shining; sides very much rounded, and rather broadly margined, basal margin much depressed, sinuated and reflexed; elytra short, much narrower and not longer than the head and thorax, widest near the middle, rufous brown, moderately asperate in transverse rows, interstices shinining; sides rather contracted towards the apex; apex broad, moderately rounded, with the edge white; abdomen moderately exserted, obtuse, with the apex faintly tridentate; legs rather long, bright yellow; antennæ long and slender; yellow, with the club dusky.

Differs from other species in its laterally dilated thorax, and short and narrow elytra.

Hab.—Central America, found by Mr. Champion near San Geronimo and Capitello, Guatemala.

T. crassicollis Matthews Ann. and Mag. Nat. Hist. 17 p. 147, 1866.—L. c. 1.12 mm.—Oblong, convex, pitchy black, clothed with short griseous hair; head large and prominent; eyes moderate, rather prominent; thorax large, very convex, longer and much broader than the head, widest near the middle, ornamented with moderate tubercles in close wavy rows; sides very much rounded, posterior margin reflexed, hinder angles acute, not much produced; elytra fuscous black, oblong; longer, but narrower than the head and thorax, closely but faintly and irregularly asperate; sides nearly straight, apex broad, scarcely rounded, rather pale; abdomen rather long, obtuse; legs and antennæ long and slender, bright yellow.

Differs from other species in the rounded sides and great width of its thorax, oblong almost parallel elytra, long and slender legs and antennæ, and in general sculpture.

United States (Dr. Schaum).

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T. Sitkaensis. Motschulsky Bull. Mosc. 18, p. 526, 1845.—L. c. .87—1 mm. —Rather short and broad, convex, pitchy black, thickly clothed with short fulvous hair; head large; eyes small, not prominent; thorax short, longer and wider than the head, widest at the base, ornamented with small tubercles irregularly distributed; sides scarcely rounded, hinder angles acute, but little produced, pale; elytra slightly attenuated towards the apex, longer but not broader than the head and thorax, moderately asperate in transverse wavy rows, rather depressed, apex much rounded, pale, with the edge white; abdomen short; legs moderate, bright yellow; antennæ rather long and slender, bright yellow.

Differs from *T. Henrici* in the form and sculpture of the thorax, depressed and more attenuated elytra, and bright yellow legs and antennæ.

Sitka (Mäklin).

T. Henrici Matthews Trich. Illust. p. 135, 1872.—L. c. .75—.87 mm.—Short, obtuse, convex, black, clothed with very short pale hair; head prominent, large and broad; eyes moderate; thorax rather short, longer and much broader than the head, widest near the base, ornamented with very small remote tubercles, much depressed at the base; sides abruptly rounded towards the base and margined, hinder angles broad, acute and produced; elytra short, quadrate, not longer or wider than the head and thorax, asperate in transverse straight rows; sides slightly rounded, apex broad, nearly straight and pale; abdomen short; legs and antennæ rather short, piceous.

Differs from other species in its short and broad form, externally dilated posterior angles of the thorax, general sculpture and piceous legs and antennæ.

Vancouver's Island (H. and J. Matthews).

T. abrupta Haldeman Journ. Acad. Nat. Sc. Philadelphia.—L. c. .87 mm.— Ovate, short and broad, very convex, black, thickly covered with rather long fulvous hair; head moderate, rather long; eyes rather large and prominent; thorax moderate, very convex, longer and much wider than the head, widest before the base, ornamented with rather large distinct tubercles irregularly arranged; sides rounded and margined, hinder angles acute, moderately produced, elytra short not longer, and rather narrower than the head and thorax, closely, and rather deeply asperate in curved transverse rows; sides slightly rounded, rather contracted at the apex, apex broad, very little rounded, pale with the edge white: abdomen rather long, obtuse, with the apex pale; legs rather short, bright yellow; antennæ dusky yellow.

Differs from other species in its small size, short, broad, and very convex form, prominent head, broad thorax and narrow elytra.

United States.

T. excelsa Matthews n. sp.—L. c. .87 mm.—Short, somewhat rounded, not attenuated posteriorly, very convex, rather shining, thinly clothed with brown hair; head and thorax black, elytra rufescent; head large; eyes prominent; thorax very convex, depressed at the base, rather longer and much broader than the head, widest before the base, ornamented with minute tubercles in remote, wavy, transverse rows, with the interstices reticulated and shining; sides margined and much rounded, basal margin almost straight, with the angles broad,

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much produced and broadly yellow; elytra short, shorter but not wider than the head and thorax, widest at the middle, very convex, moderately asperate in remote, transverse, wavy rows; sides and apex much rounded, the latter pale; abdomen rather long, obtuse; legs and antennæ dusky yellow.

Differs from *T. abrupta* in its shining surface, remote sculpture, much longer and paler hinder angles of the thorax, and longer and more slender antennæ—from others in its short, convex form, rounded sides and depressed base of the thorax, and rounded elytra.

Hab.—Central America, found by Mr. Champion on "Totonicapam," Guatemala, at an altitude of 10,500 feet.

T. minor Matthews n. sp.—L. c. .87 mm.—Oblong, oval, convex, rather shining, black, densely clothed with yellow hair; head moderate; eyes not prominent; thorax rather long, longer and rather wider than the head, closely covered with large tubercles in irregular rows, the interstices shining and faintly reticulate; sides margined and moderately rounded, with an erect black seta on each side before the middle, basal margin reflexed, and much sinuated, with the angles pale and much produced; elytra fuscescent, sub-quadrate, not longer or wider than the head and thorax, deeply and closely asperate in transverse rows; sides nearly straight, with an erect black seta near the shoulder, and another beyond the middle on each side, apex broad, much rounded, pale, with the edge white; abdomen rather long, fuscous, with the apex bidentate; legs long and robust, bright yellow; antenna long and slender, dark yellow.

Differs from *T. grandicollis* in its much smaller size, oblong form, and deeper sculpture.

Hab.—Central America, found by Mr. Champion in abundance near San Geronimo, Guatemala.

T. grandicollis Mann (Trich. Illust. p. 135).—L. c. 1—.12 mm.—Rather broad, very convex, brassy-black, thickly clothed with fulvous hairs; head large and broad; thorax large, widest before the base, ornamented with moderate tubercles irregularly placed, with the interstices reticulate; sides margined, and very much rounded with an erect black seta on each side behind the middle, hind angles acute, much produced; elytra moderate, scarcely longer, but rather narrower than the head and thorax, slightly rounded, furnished with an erect black seta on each side near the shoulder, and also behind the middle, apex slightly contracted and pale; antennæ long, piceous, or black; legs yellow.

A single specimen of this species was found by Mr. Champion on "Totonicapam," at an altitude of 10,500 feet. It seems strange that this very common European insect should occur in such a locality, and at so high an altitude, in Central America; but, after the most careful examination, I can discover no point of form or sculpture in which this specimen differs from the European examples of the female; in this sex the sides of the thorax are always less dilated than in the male.

T. cognata Matthews Cist. Ent. 2, p. 176, 1877.—L. c. 1.12 mm.—Oval, rather narrow, convex, black, clothed with very short pale hair; head rather small; eyes

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moderate; thorax moderate, longer and wider than the head, widest at the base, ornamented with small tubercles, closely but irregularly arranged, hinder angles much produced, acute and pale at the point; elytra narrow, slightly attenuated posteriorly, not longer or wider than the head and thorax, very closely asperate in transverse rows; sides slightly rounded, apex much rounded, pale, with the edge white; abdomen rather long, obtuse; legs robust, with the femora dusky, and the tibiæ bright yellow; antennæ slender dusky yellow.

Differs from *T. fascicularis* in its narrower form, smaller head and thorax, and dusky antennæ.

British Columbia (Crotch).

T. fascicularis Herbst Nat. Syst. 5, p. 8, 1793.—L. c. 1—1.25 mm.—Sub-oval, convex, black, not shining, sparingly clothed with short pale hairs; head moderate; eyes rather prominent; thorax moderate, longer and wider than the head, dilated posteriorly, widest at the base, ornamented with small, distinct tubercles in transverse wavy rows; sides slightly rounded, hinder angles produced and acute; elytra moderate, attenuated towards the apex, longer but rather narrower than the head and thorax, asperate in close, transverse rows; sides slightly rounded, apex rounded and pale; abdomen considerably exserted, obtuse; legs and antennæ moderate, bright yellow.

Differs from others in its larger size, sub-oval form, smaller head, rather long and attenuated elytra, and in sculpture.

United States.

T. Josephi Matthews Trich. Illust. p. 132, 1872.—L. c. .75 mm.—Oblong, rather narrow, moderately convex, black, thickly covered with short pale hair; head rather long; eyes rather prominent; thorax rather large, longer and broader than the head, widest at the base, very thickly covered with rather large tubercles; sides slightly rounded, posterior margin reflexed and yellow, hinder angles acute and produced; elytra rather long, oblong, with the sides nearly parallel, not wider, but nearly half as long again as the head and thorax, moderately asperate in close, but distinct, transverse rows, apex strongly rounded and flavescent; abdomen moderately exserted, obtuse; legs rather long, robust, bright yellow; antennæ slender, rather short, pitchy black.

Differs from *T. atrata*, Motsch., in its smaller size, parallel and narrow elytra, and in sculpture.

Vancouver's Island (H. and J. Matthews).

T. diffinis Matthews Trich. Illust. p. 132, 1872.—L. c. .75—.87 mm.—Oblong, rather broad, convex, black, rather thickly clothed with flavescent hair; head large, rather short and broad; eyes small, not prominent; thorax rather large, dilated posteriorly, widest before the base, longer and broader than the head, ornamented with small tubercles irregularly arranged; sides margined and rounded, hinder angles considerably produced, acute and pale; elytra rather short, quadrate, rather narrower and scarcely longer than the head and thorax, moderately asperate in transverse rows; sides margined and straight, apex broad, slightly rounded; pale, with the edge white; abdomen moderately exserted, obtuse; legs robust, bright yellow; antennæ moderate, piceous.

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Differs from other species in its small size, oblong form, thorax widest before the base, piceous antennæ, and in sculpture.

United States.

T. brevior Matthews n. sp.—L. c. .75 mm.—Oblong, moderately convex, fuscous black, with the elytra paler, clothed with short griseous hair; head large, rather produced in front; eyes large, rather prominent; thorax moderate, slightly dilated posteriorly, rather longer and wider than the head, widest near the base, covered with small, remote and indistinct tubercles; sides slightly rounded and rather broadly margined, posterior angles acute and much produced; elytra quadrate, fuscous, not longer or wider than the head and thorax, faintly asperate in transverse rows; sides almost straight, apex broad and rounded, with the edge white; abdomen castaneous, rather long and obtuse; legs and antennæ bright yellow.

Differs from *T. diffinis* in its smaller size, shorter elytra, shorter and paler antennæ, and fuscous color.

Guatemala (Champion).

T. parallelopipeda Matthews Cist. Ent. 2, p. 175, 1877.—L. c. 1 mm.—Oblong, convex, rather shining, black, clothed with rather long, yellow hair; head moderate; eyes not prominent; thorax moderate, very convex, longer and wider than the head, widest at the base, closely and irregularly covered with moderate tubercles; sides slightly rounded, hinder angles much produced and pale; elytra oblong; longer, but not wider than the head and thorax, closely asperate in transverse rows; sides nearly straight, apex broad and rounded, narrowly pale; abdomen moderately exserted; legs moderate, bright yellow; antennæ rather short, pitchy black.

Differs from *T. Hornii* in its oblong, parallel form, the thorax widest at the base, and short pitchy black antennæ.

British Columbia (Crotch).

T. xanthocera Matthews Cist. Ent. 2, p. 174, 1877.—L. c. 1 mm.—Oblong, rather broad, convex, pitchy black, with rufescent elytra, clothed with pale hair; head large; eyes not prominent; thorax large, convex, dilated posteriorly, longer and much wider than the head, widest at the base, ornamented with minute tubercles irregularly arranged; sides rounded and margined with yellow, hinder angles much elongate, flavescent; elytra short, quadrate, not longer or wider than the head and thorax, rather deeply asperate in transverse rows; sides nearly straight, suture rufescent, apex broad, slightly rounded and pale; abdomen moderately exserted, obtuse, rufopiceous; legs robust, bright yellow; antennæ long, very bright yellow.

Differs from *T. Hornii* in its large size, broad, quadrate form, rufopiceous elytra, and very bright yellow antennæ.

British Columbia (Crotch).

T. Hornii Matthews Trich. Illust. p. 176, 1872.—L. c. .87—1 mm.—Oblong, very convex, rather shining, black, rather thickly clothed with long brown hair; head large; eyes prominent; thorax moderate, longer and wider than the head, widest near the middle, closely and irregularly covered with small, distinct tuber-

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cles; sides rounded, hinder angles very acute and much produced; elytra rather short, fuscous black, not longer or wider than the head and thorax, widest near the middle, rather faintly asperate in straight transverse rows; sides slightly rounded, apex broad and much rounded; abdomen considerably exserted, obtuse; legs moderate, bright yellow, anterior tibiæ and tarsi dilated; antennæ very long and slender, bright yellow.

Differs from *T. abrupta* in its larger size, yellow and much longer antennæ.

United States (Arizona).

T. Californica Matthews Cist. Ent. 2, p. 174, 1877.—L. c. .87—1 mm.—Oblong, rather convex, shining, castaneous, clothed with short golden hair; head large and broad; eyes moderate; thorax large, convex, rather longer, and much wider than the head, widest at the base, ornamented with minute tubercles in irregular transverse rows; sides paler, rounded and margined, hinder angles very acute and considerably produced, broadly flavescent; elytra oblong, rufocastaneous, with the suture paler, rather narrower, and rather longer than the head and thorax; sides nearly parallel, closely asperate in transverse rows, apex broad, slightly rounded; abdomen moderately exserted, obtuse; legs and antennæ long and slender; bright yellow.

Differs from others in its rather long and narrow elytra, rufocastaneous color and short golden pubescence.

California (Crotch).

T. sericans Heer Fn. Col. Helvet. 1, p. 375, 1841.—L. c. .75—.87 mm.—Rather short and broad, depressed, obscure, black, not shining, more or less thickly covered with long brown hair; head large and broad; eyes moderate; thorax moderate, slightly dilated at the base, longer and broader than the head, widest before the base, covered with large tubercles in close rows, interstices rugose; sides slightly rounded, hinder angles acute, slightly produced; elytra rather short, quadrate, depressed, not attenuated, as wide and scarcely longer than the head and thorax, closely and deeply asperate in transverse rows; sides nearly straight, apex broad and rounded; abdomen obtuse, moderately exserted; legs moderate, dusky yellow; antennæ black, or pitchy black.

Differs from others in its short, broad and depressed form, long brown pubescence, black antennæ and rugose sculpture.

United States.

T. castanea Matthews Cist. Ent. 2, p. 173, 1877.—L. c. .87 mm.—Oblong, convex, rather shining, rufocastaneous, thickly clothed with golden hairs; head moderate, produced in front; eyes moderate, not prominent; thorax moderate, longer and wider than the head, widest before the base, ornamented with small tubercles in transverse rows; sides rounded and margined, hinder angles acute, very much produced and broadly yellow; elytra oblong, translucent, longer but not wider than the head and thorax; sides almost parallel and margined, rather deeply asperate in transverse rows, apex broad and rounded; abdomen considerably exserted, obtuse; legs and antennæ robust, bright yellow.

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Differs from others in its translucent, castaneous color, parallel elytra, and robust legs and antennæ.

British Columbia (Crotch).

T. bidilatata Matthews n. sp.—L. c. .63—.75 mm.—Oblong, convex, not shining, dusky castaneous, thickly covered with short griseous hair; head large and broad; eyes large, rather prominent; thorax transverse, not longer but rather wider than the head, widest near the middle, ornamented with rather large tubercles in transverse wavy rows; sides rounded and margined, hinder angles acute, but very little produced; elytra oblong, oval, not wider or longer than the head and thorax, widest near the middle, very closely asperate in transverse rows, apex broad, nearly straight, with the edge white; abdomen long, obtuse, with the edges of the segments pale; legs long, bright yellow; antennæ dusky yellow.

Differs from other species in its *twice* dilated form.

Guatemala and Vera Paz (Champion).

T. vicina Matthews Cist. Ent. 2, p. 172, 1877.—L. c. .75 mm.—Oblong, slightly convex, deep black and shining, clothed with yellow hair; head very large and broad; eyes scarcely prominent; thorax large, longer and wider than the head, widest at the base, ornamented with small tubercles in remote wavy rows; sides slightly rounded and broadly margined, the margin pale, hinder angles broad, produced and pale; elytra short, quadrate, rather narrower and not longer than the head and thorax, moderately asperate in remote transverse wavy rows; sides straight, apex scarcely rounded and narrowly pale; abdomen not much exserted; legs bright yellow; antennæ black.

Differs from *T. picicornis*, Mann, in its larger size, fainter and different sculpture of the thorax, and longer antennæ.

British Columbia (Crotch).

T. parallela Motschulsky Bull. Mosc. 41, p. 176, 1868.—L. c. .75—.87 mm.—Oval, elongate, very convex, fuscous black, rather shining, thickly clothed with long, fulvous hair; head large and broad; eyes large, not prominent; thorax rather large, sub-quadrate, longer and wider than the head, widest at the base, ornamented with small, remote tubercles; sides slightly rounded, hinder angles much produced and very acute; elytra rufofuscous, longer but not wider than the head and thorax, widest at the shoulders, moderately asperate, apex rounded and broadly pale; abdomen rather long, semi-oval; legs and antennæ long, bright yellow.

Differs from others in its oval, elongate form, rufofuscous elytra, and bright yellow antennæ. Allied to *T. Montandonii*, Allib.

United States (District of Columbia, Ulke).

T. nigrita Matthews n. sp.—L. c. .63 mm.—Oblong, moderately convex, not shining, fuscous black, clothed with brown hair; head moderate; eyes rather prominent; thorax moderate, rather transverse, wider but scarcely longer than the head, slightly dilated and widest at the base, ornamented with small tubercles in transverse sinuated rows; sides moderately rounded and rather broadly margined, posterior angles broad and slightly produced; elytra oblong, fuscous; rather

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longer but not wider than the head and thorax, deeply and closely asperate in transverse rows; sides straight, apex broad, much rounded and paler; abdomen much exserted, piceous; legs and antennæ slender, yellow; the latter dusky.

Differs from others in its small size, oblong form, and piceous abdomen; allied to *T. obscæna*, Woll., from which it differs in its smaller size, more depressed form, and more rugose sculpture.

Guatemala (Champion).

T. aspera Haldeman Journ. Acad. Nat. Sc., Phila. p. 109, 1849.—L. c. .63—.75 mm.—Sub-oblong, broad, rather depressed, dull black, clothed with griseous hair; head very large; eyes large, rather prominent; thorax short, rather longer but not wider than the head, widest at the base, ornamented with large tubercles in transverse rows; sides slightly rounded, posterior angles acute, scarcely produced; elytra rather longer but not wider than the head and thorax, widest at the apex, deeply asperate, apex slightly rounded, with the edge white; legs moderate, yellow; antennæ piceous.

Differs from others in its small size, form broader posteriorly, rugose sculpture, and piceous antennæ.

United States.

T. ambigua Matthews Ent. Mo. Mag. 1, p. 177, 1865.—L. c. .63—.75 mm.—Oblong, rather convex, castaneous, sparingly clothed with pale hair; head large and broad; eyes small, not prominent; thorax moderate, longer and wider than the head, widest before the base, ornamented with rather large, distinct tubercles, posterior angles acute, slightly produced; elytra oblong, longer but not wider than the head and thorax, rather deeply asperate in transverse rows; sides nearly straight, apex very broad and rounded, rather paler; legs long, robust, bright yellow; antennæ slender, dusky yellow.

Differs from other species in its oblong form, rather long elytra, robust legs and slender antennæ, castaneous color, and general sculpture.

United States (Dr. Schaum).

T. vitrea Matthews n. sp.—L. c. .50—.63 mm.—Oval, very short and broad, very convex and very shining, translucent, castaneous, thinly clothed with short golden hair; head large and broad; eyes very large and prominent; thorax short, transverse, not longer but rather wider than the head, widest before the base, ornamented with very minute, indistinct, remote tubercles, interstices smooth and very shining; sides rounded, basal margin nearly straight, with the angles very little produced; elytra sub-quadrate, as long and as wide as the head and thorax, lightly but closely asperate; sides rounded and contracted towards the apex, apex slightly rounded; legs and antennæ rather large, bright yellow.

Differs from all other species in its very short, convex form and shining, translucent surface.

Hab.—Central America, found in profusion near Bugaba, Panama, by Mr. Champion.

T. mœrens Matthews Cist. Ent. 11, p. 298, 1874.—L. c. .63 mm.—Short broad, very convex, very shining, black, sparingly clothed with pale hair; head large and short; eyes small not prominent; thorax moderate, transverse, rather

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longer but not wider than the head, widest near the middle, smooth and very shining; sides moderately rounded and broadly margined, posterior angles right angles; elytra very short and very convex, not longer or wider than the head and thorax, widest at the middle, very faintly asperate in transverse rows, apex very broad and scarcely rounded, with the edges yellow; abdomen not much exserted; legs moderate, bright yellow, with the tibiæ and basal joints of the anterior tarsi dilated; antennæ very long and slender, bright yellow.

Differs from other species in its small size, very convex form, smooth surface and shining black color.

United States (Crotch).

T. Aubei Matthews Trich. Illust. p. 117.—L. c. .75—.87 mm.—Elongate oval, moderately convex, brown, rather thickly covered with pale hair; head large, elongate, much rounded in front; eyes rather prominent; thorax wider but not longer than the head, widest behind the middle, ornamented with very small tubercles in close wavy rows, interstices closely reticulate; sides much rounded, basal margin straight, with the angles rather obtuse; elytra rather long, rather wider and more than half as long again as the head and thorax, widest towards the apex, deeply and irregularly asperate, suture slightly elevated posteriorly, apex broad, slightly rounded; legs and antennæ long and slender, bright yellow.

Differs from other species in its long and narrow shape, pale brown color, rounded thorax, and long legs and antennæ.

Of this distinct species two specimens were taken by Germaine many years ago in Chili; recently a single example was found near Washington by Mr. Ulke, and several others by Mr. Champion on "Cerro Tunil," in Guatemala, at an altitude of 4500 feet.

SMICRUS.

Matthews Trich. Illust. p. 110, 1872.

BODY oblong, elongate.

ANTENNÆ very long and slender, setose, 11-jointed, 3 last joints incrassated, forming an elongate, moniliform club.

HEAD large and broad.

PRONOTUM short, sub-quadrate, slightly constricted towards the base.

ELYTRA rather long, abruptly truncate.

ABDOMEN broad, obtuse.

MESOSTERNUM moderate, carinated.

METASTERNUM rather long, extending to the sides of the body.

VENTER 6 segments, apical segment either entire or deeply sculptured.

LEGS long and robust.

POSTERIOR COXÆ moderately distant, widely laminated.

S. filicornis Fairm. et Laboulb. Faun. Fr. 1, p. 338, 1854.—L. c. .75—1.12 mm.—Oblong, sub-parallel, convex, black, clothed with a short, yellow pubescence: head large, produced in front; eyes large, rather prominent: thorax short, quad-

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rate, rather longer and wider than the head, widest in front, closely covered with minute tubercles; sides rounded anteriorly, constricted towards the base, margined with yellow, posterior angles acute, rather prominent; elytra long, as long and nearly as wide as the head and thorax, very closely, minutely, but deeply asperate; sides nearly parallel, apex broad, almost straight, pale; abdomen long, obtuse; 5 segments exposed; antennæ very long, pale yellow; legs long, robust, bright yellow.

United States and South America (Dr. Schaum).

NEPHANES.

Thomson Skand. Col. 1, p. 62. 1859.

ANTENNÆ 11-jointed, last 3 much incrassated, forming a moniliform club.

HEAD large, porrected.

PRONOTUM small, more or less quadrate.

ELYTRA short, abruptly truncate.

ABDOMEN elongate, obtuse.

MESOSTERNUM moderate, not carinated.

METASTERNUM rather short, extending to the sides of the body.

VENTER 6 segments.

LEGS rather short.

POSTERIOR COXÆ remote, large, and narrowly laminated.

Synoptic Table of Species.

Body rather elongate, pubescence dense ..... **pubescens.**
Body short, pubescence sparing.
Elytra short, size small ..... **flaviventris.**
Elytra longer, size larger ..... **lævisculus.**

N. pubescens n. s.—L. c. .50—.63 mm.—Oblong, elongate, rather depressed, castaneous, thickly clothed with griseous hair; head large, produced in front; eyes moderate, rather prominent; thorax short, transverse, not longer and scarcely wider than the head, widest behind the middle, ornamented with small tubercles irregularly arranged; sides slightly rounded, hinder angles rather obtuse; elytra short, not longer or wider than the head and thorax, widest near the apex, closely but faintly asperate in transverse rows; sides nearly straight, apex broad, almost straight; abdomen pale, long and obtuse; legs and antennæ long, bright yellow.

Guatemala (Champion).

I feel some hesitation in placing this species in the genus *Nephanes*. I was at first inclined to think from its elongate shape and dense pubescence that it belonged to *Ptiliodes*, but the form of the antennæ is entirely similar to *Nephanes*, and differs much from the former genus.

N. lævisculus Matthews Ann. and Mag. Nat. Hist. 17, p. 148, 1866.—L. c. —.63 mm.—Short, broad, convex, shining, pitchy castaneous, clothed with pale hair; head very large and broad; eyes large and prominent; thorax rather long,

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rather longer and wider than the head, widest behind the middle, ornamented with large, circular, umbilicated fovea on the disc; sides slightly rounded, posterior angles obtuse; elytra rather short, as long as the head and thorax, but rather narrower at the shoulders, widest near the apex, closely asperate; sides nearly straight, apex very broad, almost straight; abdomen rather long, obtuse, pale ferruginous; antennæ long and slender, dusky yellow; legs long, robust, bright yellow.

Differs from *N. flaviventris* in its larger size, longer thorax, and remarkable sculpture.

United States.

N. flaviventris Motsch. Bull. Mosc. 41, p. 183, 1868.—L. c. .50 mm.—Oval, very short, convex, shining, brassy castaneous, with the shoulders of the elytra rufous, clothed with short pale hair; head moderate; eyes not prominent; thorax rather longer and wider than the head, widest at the middle, closely covered with small tubercles, posterior angles right angles; elytra very short, quadrate, as wide as, but shorter than the head and thorax, shoulders rufous; sides slightly rounded, rather contracted towards the apex, deeply asperate in remote transverse rows, apex slightly rounded; abdomen much exserted, pale castaneous; legs and antennæ yellow; latter rather dusky.

Differs from *N. læviusculus* in its smaller size, shorter elytra, and general sculpture.

Central America (Motschulsky, Champion).

PTILIINA.

PTILIUM.

Erichson Ins. Deutsch. 3, p. 26, 1845.

Body generally elongate.

Antennæ 11-jointed, 9 scarcely incrassate, 10, 11 much incrassated, moniliform.

Head prominent.

Pronotum short, either sub-quadrate, or more or less contracted towards the base.

Elytra entire.

Abdomen with the pygidium exposed.

Mesosternum short, broadly carinated.

Metasternum large, quadrate, extending to the sides of the body.

Venter 7 segments, 6, 7 sometimes sculptured.

Legs short, especially the posterior pair.

Posterior coxæ moderately distant, more or less broadly laminated.

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Synoptic Table of Species.

Pronotum contracted at the base.
Antennæ robust.....**tropicum.**
Antennæ slender.....**planum.**
Pronotum not contracted at the base.
Body short and broad.
Size moderate, color pitchy black.....**Collani.**
Size exceedingly minute, color pale.....**Hornianum.**
Body elongate.
Color ferruginous, or testaceous.
Antennæ very long and slender.....**Columbianum.**
Color black, or piceous.
Pronotum widest at the base.....**obscurum.**
Pronotum widest near the middle.....**Sharpi.**

P. Collani (Mäklin) Mannerheim Bull. Mosc. 26, p. 95, 1853.—L. c. .63 mm. —Oblong, moderately convex, pitchy black, sparingly clothed with griseous hair; head large and broad; eyes large, prominent; thorax transverse, quadrate, scarcely longer or broader than the head, widest near the middle, closely tuberculate; sides rounded, posterior angles obtuse; elytra scarcely wider, but half as long again as the head and thorax, widest near the middle, closely and deeply asperate; sides slightly rounded, apex broad and rounded; legs and antennæ rather long, yellow; the latter rather dusky.

Differs from other species in its oblong form, broad head and thorax, and pitchy black color.

United States.

P. Hornianum n. sp.—L. c. .37 mm.—Oblongum, convexum, sat nitidum, castaneum pilis griseis vestitum; capite magno lato, oculis modicis; pronoto parvo transverso, capite breviori vix latiori, nitido tuberculis exiguis confertim obtecto, lateribus leviter rotundatis, leviter marginatis, margine basali leviter reflexâ angulis fere rectis; elytris oblongis, capite atque pronoto parum longioribus vix latioribus, ad media latissimis, profunde et reticulatim asperatis, lateribus minime rotundatis, apice lato rotundato; pedibus late, antennis, obscure, flavis.

Head large and broad, produced in front, shining, closely covered with minute tubercles; eyes moderate, rather prominent; antennæ long, dark yellow.

Thorax small, transverse, shorter and scarcely wider than the head, rather shining, closely covered with minute tubercles, widest near the middle: sides slightly rounded and faintly margined, basal margin straight and faintly reflexed, with the angles nearly right angles.

Scutellum small, triangular, closely asperate.

Elytra oblong, convex, rather longer, but scarcely wider than the head and thorax, widest at the middle, deeply and reticulately asperate; sides very little rounded, apex very broad and much rounded.

Abdomen with the pygidium pale.

Legs moderate, bright yellow.

Under parts pale castaneous, with the mouth, hinder part of the metasternum, and terminal segments of the venter flavescent.

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Differs from *P. rugulosum* in its exceedingly minute size, fainter sculpture, shining surface, and bright yellow legs.

Hab.—Texas, near Columbus.

Obs.—Two fine and perfect specimens of this species, the most minute of the whole family, except *Nanosella fungi*, were collected by E. A. Schwarz.

P. tropicum Matthews n. sp.—L. c. .50—.63 mm.—Rather long, moderately convex and shining, rufo-testaceous, clothed with very short flavescent hair; head large, rounded in front; eyes large and rather prominent; thorax small, not wider or longer than the head, widest before the middle, rather coarsely and closely tuberculate, sometimes with a faint depression on the disc; sides much rounded in front and strongly contracted towards the base, slightly margined, basal margin nearly straight with the angles moderate; elytra much longer and slightly wider than the head and thorax, widest near the apex, very finely and closely asperate; sides faintly rounded, apex very broad, slightly rounded; abdomen with the pygidium only exposed; legs and antennæ short, robust, bright yellow.

Differs from *P. planum* in its smaller size, shorter form, short and very robust antennæ, and in sculpture.

Hab.—Central America, found in some numbers near Bugaba, Panama, by Mr. Champion.

P. planum Matthews n. sp.—L. c. .63 mm.—Elongate, almost linear, moderately convex, ferruginous, densely clothed with yellow pubescence; head large, produced in front; eyes large and very prominent; thorax small, transverse, narrower and not longer than the head, widest before the middle, much contracted towards the base, closely and finely tuberculate, hinder angles almost right angles; elytra long and narrow, scarcely wider but more than half as long again as the head and thorax, closely but finely asperate, apex broad and rounded; legs yellow, long and slender; antennæ rather short, bright yellow.

Differs from other species in its long and almost linear form. *P. planum* is allied to to the European *P. foveolatum*, from which it may be known by the smooth unsculptured disc of the thorax.

Guatemala (Champion).

P. obscurum Matthews Cist. Ent. 2, p. 171, 1877.—L. c. .75 mm.—Oval, convex, piceous, rather thickly clothed with hair; head large, obtuse; eyes moderate, not prominent; thorax moderate, longer and wider than the head, widest at the base, ornamented with large tubercles in transverse sinuated rows; interstices very shining; sides slightly rounded, posterior angles obtuse; elytra rather short, not longer, and scarcely wider than the head and thorax, widest at the apex, deeply asperate in transverse rows, apex very much rounded and broadly pale; legs and antennæ moderate yellow.

Differs from the two preceding species in its shorter and broader form, larger head and thorax, piceous color and sculpture.

British Columbia (Crotch).

P. humile Matthews Cist. Ent. 2, p. 170, 1877.—L. c. .63—.75 mm.—Elongate, moderately convex, ferruginous, rather thickly clothed with yellow hair;

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head rather large, produced in front; eyes large and prominent; thorax small and short, shorter and scarcely wider than the head, widest near the middle, closely covered with rather large tubercles; sides rounded, posterior angles obtuse; elytra elongate, oval, scarcely wider but more than twice as long as the head and thorax, widest near the middle, moderately asperate in distant transverse rows, apex slightly rounded; legs and antennæ short, robust, bright yellow.

Differs from *P. Columbianum* in its much smaller size, short and robust legs and antennæ, and in the sculpture of the thorax.

California (Crotch).

P. Columbianum Matthews Cist. Ent. 2, p. 169, 1877.—L. c. .87 mm.—Elongate, oval, convex, ferruginous or castaneous, rather thickly clothed with yellow hair; head large; eyes large and prominent; thorax rather small, rather wider and shorter than the head, widest at the base, ornamented with distinct and rather large tubercles, the interstices shining; sides margined and much rounded, posterior angles rounded; elytra long, elongate, oval, rather wider and almost twice as long as the head and thorax, widest behind the middle, rather deeply asperate in distinct transverse rows, apex broad and slightly rounded; legs and antennæ long, bright yellow.

Differs from other species in its large size, elongate form, pale color, and very long antennæ.

British Columbia and California (Crotch).

P. Sharpi Matthews Trich. Illust. p. 101, 1872.—L. c. .87 mm.—Elongate, convex, pitchy black, clothed with short golden hairs; head rather small; eyes large and very prominent; thorax small, scarcely longer or wider than the head, widest before the middle, deeply and very closely tuberculate; sides much rounded, posterior angles obtuse; elytra large, ovate, broader and almost twice as long as the head and thorax, widest near the middle, moderately asperate in transverse rows, apex obtuse; legs and antennæ dusky yellow; the latter rather long.

Differs from other species in its large size and pitchy black color.

Vancouver's Island (H. and J. Matthews).

MILLIDIUM.

Motschulsky Bull. Mosc. 41, p. 176, 1868.

ANTENNÆ 11-jointed, 3-8 rather stout, 9–11 much incrassated, forming a moniliform club.

HEAD porrected.

PRONOTUM small, strongly constricted at the base.

ELYTRA entire.

ABDOMEN with the pygidium beyond the elytra.

MESOSTERNUM broadly carinated, with a very deep oval impression near the collum.

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METASTERNUM narrow, sub-quadrate, widely distant from the sides of the body, episterna and epimera very broad.
VENTER 6 segments.
LEGS anterior and intermediate long, posterior very broad.
POSTERIOR COXÆ remote, very broadly laminated.

M. triramosum Motschulsky Bull. Mosc. 41, p. 189, 1868.—L. c. .50—.63 mm. —Elongate, oval, convex, very shining and smooth, rufo-piceous; head moderate; eyes large and prominent; thorax moderate, not longer and scarcely wider than the head, widest behind the middle, very much constricted towards the base, with five very deep sulci, of which the middle reaches from the base nearly to the anterior margin, the intermediate parallel and rather shorter, the exterior very short and divergent, the posterior angles acute and prominent; elytra long and narrow, longer but scarcely wider than the head and thorax, widest before the middle, remotely and very indistinctly punctate-striate, apex broad, rounded and paler; legs and antennæ pale yellow.

Differs from *M. trisulcatum* in its smaller size, rufo-piceous color, and parallel sulci of the thorax.

Central America (Motschulsky).

ACTIDIUM.

Matthews Ent. M. Mag. 5, p. 12, 1868.

ANTENNÆ 11-jointed, 9th scarcely, 10th and 11th very much incrassated.
HEAD porrected.
PRONOTUM small, base lying upon the shoulders of the elytra.
ELYTRA entire, long.
MESOSTERNUM small, widely carinated.
METASTERNUM long, quadrate, reaching to the sides of the body.
VENTER with 7 segments.
LEGS robust, generally short and much dilated, tarsi very short.
POSTERIOR COXÆ slightly distant, very slightly laminated.

Synoptic Table of Species.

Body smooth and very shining.
  Thorax closely tuberculate, or alutaceous.
    Elytra inflated..... **Crotchianum.**
  Thorax smooth, elytra moderately convex..... **politum.**
Body pubescent and linear..... **Fowlerianum.**

A. Fowlerianum Matthews n. sp.—L. c. .38—.50 mm.—Elongate, linear, very narrow, convex, obscure, castaneous, densely clothed with silvery pubescence; head large, obtuse, closely tuberculate; eyes small, rather prominent; thorax small, transverse, neither longer or wider than the head, very closely tuberculate; sides rounded and abruptly contracted at the base, basal margin rounded; elytra long, twice as long, but scarcely wider than the head and thorax, widest before the middle, and attenuated towards the apex, closely asperate, apex rounded; legs bright yellow; antennæ robust, dusky yellow.

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Differs from the other species in its minute size, elongate and attenuated form, pubescent surface, and close sculpture.

Guatemala (Champion).

A. politum Matthews Cist. Ent. 2, p. 168, 1877.—L. c. .50 mm.—Oval, convex, black, very shining, very sparingly clothed with very short hairs; head rather large; eyes rather small; thorax small and short, rather wider but not longer than the head, widest at the base; sides slightly rounded, basal margin rounded; elytra oval, rather longer and wider than the head and thorax, widest before the middle, very shining, very faintly asperate in transverse distinct sinuated rows, apex much rounded, paler; legs and antennæ rather long, pitchy black.

Differs from *A. Crotchianum* in its minute size, very shining, smooth and almost impunctate surface.

California (Crotch).

A. Crotchianum Matthews Cist. Ent. 2, p. 168, 1877.—L. c. .63 mm.—Oval, very convex, black, clothed with very short silvery hairs; head large; eyes moderate, rather prominent; thorax short, transverse, not longer, but rather wider than the head, closely and rather deeply punctured, or tuberculate, with a large transverse depression near the base; sides rounded, basal margin nearly straight, lying on the elytra; elytra ovate, exceedingly convex, wider and more than half as long again as the head and thorax, widest near the middle, closely asperate in transverse rows, apex attenuate and rounded, rather pale; legs and antennæ rather long and slender, pitchy black.

Differs from *A. politum* in its much larger size, inflated form of the elytra, and in sculpture.

British Columbia (Crotch).

PTENIDIUM.

Erichson Nat. Ins. Deutsch. 3, p. 35, 1845.

ANTENNÆ 11-jointed, last 3 incrassated, club moniliform.

HEAD porrected.

PRONOTUM rather small.

ELYTRA entire.

MESOSTERNUM short, faintly carinated.

METASTERNUM large, quadrate, extending to the sides of the body.

VENTER with 7 segments.

LEGS rather long, tarsi very slender.

POSTERIOR COXÆ remote, slightly laminated.

Synoptic Table of Species.

Pronotum almost glabrous, with four foveæ near the base.
  Antennæ pitchy black ..... **pullum.**
  Antennæ flavescent.
    Color of body black, or pitchy black.

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Pronotum large, dilated in front.....**Mannerheimii.**
Pronotum small, with the base of the thorax and shoulders of the elytra strangulated.....**strangulatum.**
Color of body rufo-piceous, or rufo-castaneous.
Body turgidly convex.....**obesum.**
Body moderately convex.
Whole surface impunctate.....**impunctatum.**
Head, thorax and scutellum foveolate.....**foveatum.**
Pronotum alone foveolate.....**ignobile.**
Color of body pale castaneous.....**foveicolle.**
Pronotum without four distinct foveæ at the base.....**evanescens.**

Species added to the foregoing by more recent discoveries:

Pt. nitens, distinguished by its shining impunctate surface and absence of the basal foveæ of the thorax, and from *P. impunctatum*, by its larger size and broad base of the thorax.

Pt. speculifer, distinguished from *Pt. obesum*, by its larger size, longer antennæ, and peculiar arrangement of the thoracic foveæ.

Pt. Ulkei, distinguished from all by the deep foveolate punctuation of the whole body.

P. strangulatum Matthews n. sp. –L. c. .75—.87 mm.—Elongate, strangulated at the shoulders, very convex, smooth and shining black; head large, produced in front; eyes large and prominent; thorax small, transverse, rather wider but not longer than the head, widest before the middle, very strongly contracted at the base, smooth and shining, with four small, very indistinct foveæ near the base, and two others near each basal angle; sides broadly margined and much rounded, basal angles obtuse; elytra ovate, very convex, much wider, and almost twice as long as the head and thorax, widest before the middle, strongly attenuated at the apex and the shoulders, very shining black with the shoulders and apex rufous, with a row of punctures on each side of the anterior half of the suture terminating in a short convergent line; legs slender, bright yellow; antennæ yellow, with the club dusky.

Differs from all other species in its strangulated form.

Guatemala (Champion).

P. foveicolle LeConte Smith. Misc. Coll. p. 63.—L. c. .75 mm.—Ovate, short, broad, very convex and shining, bright castaneous, sparingly covered with silvery hairs; head large and broad, rounded in front; eyes moderate, not prominent; thorax moderate, wider but scarcely longer than the head, widest before the middle, with two small foveæ near the anterior margin, and four very large, deep, circular, equidistant foveæ near the base, and a deep longitudinal impression on each side near the margin; sides widely margined, rounded anteriorly and contracted towards the base, with a single erect curved seta on each side behind the middle, hinder angles almost right angles; elytra broad, short, ovate, rather longer and wider than the head and thorax, widest before the middle, finely and very remotely punctured; sides much rounded and broadly margined, apex obtuse; legs and antennæ long, bright yellow, with the club of the latter dusky.

Differs from other species in its small size, short, convex form, castaneous color, the peculiar sculpture and shape of the thorax.

United States.

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P. Mannerheimii Matthews Trich. Illust. p. 83, 1872.—L. c. .75—.87 mm. —Elongate, attenuated posteriorly, black, and very shining; head rather small; eyes large and prominent; thorax large almost quadrate, dilated anteriorly, longer and wider than the head, very smooth and shining, minutely and very remotely punctured with two small foveæ near the anterior margin, and four large, deep, equidistant foveæ near the base: sides scarcely rounded, but widely margined, hinder angles obtuse; elytra long, narrow and much attenuated towards the apex, not wider but more than half as long again as the head and thorax, widest before the middle, remotely but distinctly punctate-striate; sides margined and slightly rounded, apex acute, narrowly pale; legs and antennæ long, robust, bright yellow, tibiæ dilated at the apex.

Differs from other species in its narrow, attenuated form, large quadrate thorax and narrow elytra.

United States (Dr. LeConte).

P. ignobile Matthews n. sp.—L. c, .63 mm.—Oval, rather elongate, moderately convex, pitchy black, smooth and very shining; head large, rather elongate; eyes large and prominent; thorax moderate, rather wider, but scarcely longer than the head, smooth and very shining, with large and deep foveæ near the base; sides margined and rounded, widest at the middle, hinder angles obtuse; elytra oval, rather longer but not wider than the head and thorax, impunctate and shining, widest before the middle, attenuated posteriorly, apex pale; legs and antennæ rather long, bright yellow.

Differs from other species in its minute size, form and peculiar sculpture.

Guatemala (Champion).

P. nitens Matthews n. sp.—L. c. 1 mm.—Elongate, oblong, very convex and shining, glabrous, deep black; head large and prominent; eyes large, rather prominent; thorax moderate, wider and rather longer than the head, widest at the base, very convex and shining, marked with a few indistinct punctures, but without the usual basal foveæ; sides moderately rounded and faintly margined, basal margin slightly rounded, with the angles obtuse; elytra ovate, longer but not wider than the head and thorax, widest at the middle, very convex and shining, marked with a few scattered punctures; sides faintly margined, apex obtuse, fuscescent; legs and antennæ moderate, bright yellow.

Differs from *Pt. Bruchii* in its smaller size and the absence of the basal foveæ of the thorax; from others in its shining, glabrous and almost impunctate surface.

Hab.—Central America; one specimen found by Mr. E. Janson near Chontales, Nicaragua.

P. foveatum Matthews n. sp.—L. c. .63—.75 mm.—Obtusely ovate, very convex and very shining, pitchy black; head large and broad with three large punctures in a line on each side near the eye; eyes large and rather prominent; thorax moderate, rather longer and wider than the head, with four deep, equidistant foveæ near the base, and two smaller foveæ near the anterior margin; sides rounded and margined, hinder angles obtuse; scutellum large and very deeply punctured: elytra rather short, slightly longer and wider than the head and

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thorax, widest before the middle, very smooth and shining, with a single stria of remote punctures on each side of the suture, apex slightly attenuated; legs and antennæ rather long, robust, bright yellow.

Differs from other species in its foveolate head, thorax and scutellum, and almost impunctate elytra.

Guatemala (Champion).

P. pullum (Mäklin) Mannerheim Bull. Mosc. 25, p. 283, 1845.—L. c. 1 mm.—Ovate, convex, very shining, black very sparingly clothed with silvery hairs; head moderate, much rounded in front; eyes moderate, not prominent; thorax large, longer and wider than the head, widest behind the middle, remotely marked with large shallow punctures on the disk, and four small foveæ near the base; sides margined and much rounded, hinder angles rounded; elytra ovate, half as long again as the head and thorax, but scarcely wider, widest before the middle, much attenuated posteriorly, rather deeply and thickly punctured, apex paler and slightly rounded; legs and antennæ long, pitchy black.

Differs from other species in its large thorax, attenuated elytra, pitchy black legs and antennæ, and general sculpture.

California (Mäklin).

P. evanescens, *Sil. evanescens.* Marsh. Col. Brit. p. 126, 1802. *P. apicale* Erich. 1845, *terminale,* Haldeman, 1852.—L. c. 1—1½ mm.—Ovate, rather broad, very convex and shining, black, or piceous, with the apex of the elytra broadly rufo-testaceous, sparingly clothed with long silver hairs; head moderate; eyes rather large and prominent; thorax short, widest behind the middle, rather deeply but remotely punctured, with a deep transverse impression on each side at the base near the hinder angles; sides rounded, posterior angles obtuse; elytra ovate, widest before the middle, rather deeply but remotely punctate-striate; apex obtuse, more or less widely rufo-testaceous; legs and antennæ rather long, bright yellow, club of the latter dusky.

This widely diffused species may be more easily recognized by the widely pale apex of the elytra, the absence of distinct foveæ at the base of the thorax, and by the transverse impressions near its posterior angles. The differences between this species and its nearest allies, *P. Wankiczii* and *P. atomaroides,* are described in the "Trichopterygia Illustrata," but need not be repeated here, since neither of the two last-named species have as yet been found in America.

P. impunctatum Matthews n. sp.—L. c. .75—.87 mm.—Elongate, oblong, very convex and very shining, piceous; head large and broad; eyes large; thorax rather large, transverse, wider but not longer than the head, very convex, impunctate, smooth and very shining; sides rounded, posterior angles obtuse; elytra ovate, obtuse; scarcly longer, and rather narrower than the head and thorax, almost impunctate, convex and very shining; sides margined, widest at the middle, apex obtuse, widely rufescent; legs and antennæ moderate, bright yellow.

Differs from other species in its broad head and thorax, narrow elytra, impunctate surface, and absence of the usual foveæ at the base of the thorax.

Guatemala, not uncommon (Champion).

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P. obesum Matthews n. sp.—L. c. .87 mm.—Short and broad, exceedingly convex, smooth and very shining; head short and broad; eyes large, scarcely prominent; thorax moderate, transverse, rather longer and much wider than the head, very convex, smooth and shining, with four small equidistant punctures near the base, and two near the anterior margin; sides much rounded, widest at the middle, posterior angles obtuse; elytra short, ovate, very smooth and shining, rather longer but scarcely wider than the head and thorax, widest before the middle, apex very obtuse; legs moderate, yellow; antennæ short, dusky yellow.

Differs from other species in its exceedingly convex and short form, almost impunctate surface and short antennæ.

Guatemala (Champion).

P. speculifer n. sp.—L. c. 1 mm.—Ovale, validissime convexum, glaberrimum nitidissimum, piceum aut rufo-piceum elytris rufescentibus pilorum expers; capite sat magna lato; pronoto modico punctis perexiguis densis notato, foveis duabus parvis antice et duabus etiam parvis postice impresso, ad medium latiori lateribus valde rotundatis leviter marginatis; elytris modicis, capite atque pronoto parum longioribus vis latioribus, ante media latioribus, punctis perexiguis densis, notatis, lateribus leviter marginatis, apice obtuso; pedibus atque antennis sat gracilibus læte flavis.

Head rather large and broad, very smooth and shining, with a small fovea on each side near the eye, eyes large and prominent; antennæ rather slender, bright yellow, palpi bright yellow.

Thorax moderate, rather longer and broader than the head, very convex, smooth and shining, thickly covered with exceedingly minute punctures, with two small foveæ near the middle anteriorly and two smaller foveæ posteriorly near the base, widest at the middle; sides much rounded and slightly margined, basal margin nearly straight, with the angles rather obtuse.

Scutellum large and broad, triangular, smooth and shining.

Elytra moderate, sometimes rufescent, rather larger but scarcely wider than the head and thorax, widest before the middle, exceedingly convex and shining, thickly covered with very minute punctures; sides slightly margined, apex obtuse, paler.

Abdomen with the pygidium pale.

Legs rather slender, bright yellow, anterior tibiæ dilated towards the apex.

Under parts piceous, with the mouth yellow.

Differs from *Pt. obesum* in its larger size, longer antennæ, and peculiar arrangement of the foveæ at the base of the thorax.

Hab.—United States, found by E. A. Schwarz near Cambridge, Mass.

P. Ulkei n. sp.—L. c. .75 mm.—Oblongum convexum nitidissimum, punctis, foveolatis profundis notatum, castaneum pilis validis flavis sparse vestitum, capite modico sat elongato, oculis magnis prominulis; pronoto modico, capite parum latiori haud longiori pone medium latiori, punctis remotis profundis foveolatis per totum notatum, lateribus postice contractis, margine basali fere rectâ angulis sat obtusis; elytris ovalibus, capite atque pronoto sat longioribus et latioribus, ante media latioribus, apice obtuso dilutiori; pedibus atque antennis læte flavis.

Head moderate, rather elongate, very shining, marked throughout with deep, remote punctures; eyes large, rather prominent; antennæ long and slender, bright yellow.

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Thorax moderate, rather broader, but not longer than the head, widest behind the middle, rather contracted towards the base, very convex and shining, marked throughout with deep, remote foveæ; sides slightly margined, basal margin nearly straight, with the angles rather obtuse.

Scutellum very large, triangular, marked with deep, remote foveæ.

Elytra oval, widest before the middle, rather longer and wider than the head and thorax, convex and shining, marked throughout with deep, distant, irregular foveolate punctures; sides slightly margined, apex obtuse, paler.

Legs moderate, dark yellow, with the femora dusky.

Under parts wholly castaneous.

Differs from *Pt. Lawsoni* in its smaller size, less convex form, deeper and more distant punctures.

Hab.—North America, found by Mr. Ulke in District of Columbia.

Obs.—This species belongs to the foveolate section of the genus, represented in Europe by *Pt. punctatum*, and in Australia by *Pt. Lawsoni*.

MOTSCHULSKIUM.

Matthews Trich. Illust. p. 72. 1872.

Body elongate, oval.

Head rather large, sessile.

Antennæ 11-jointed, 9th joint scarcely incrassated, 10th rather larger, 11th much larger than the 10th.

Pronotum quadrate, sides sinuated.

Elytra entire, rather long, epipleura very broad.

Mesosternum short, carinated for its whole length.

Metasternum sub-quadrate, not reaching the sides of the body.

Venter with six segments.

Legs moderate, tibiæ dilated, tarsi short, robust, with the basal joints elongate and incrassate.

Posterior coxæ contingent, narrowly laminated.

M. sinuatocolle Matthews Trich. Illust. p. 74, 1872.—L. c. 1½ mm.—Elongate, ovate, convex, fuscous black, covered with short silvery pubescence, coarsely punctate; head rather small; eyes moderate; thorax large, sub-quadrate, slightly constricted near the base, deeply punctured, longer and wider than the head, widest before the middle; sides sinuated, posterior angles obtuse; elytra ovate, rather wider and half as long again as the head and thorax, widest before the middle, deeply punctured, with the interstices rugose, apex broad, rounded; legs and antennæ rufous yellow.

United States. I found a mutilated specimen of this remarkable species in the collection of Dr. LeConte, several others were subsequently taken by Mr. Crotch in California.

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MICRIDIUM.

Motschulsky Bull. Mosc. 41, p. 188, 1869.

HEAD elongate, obtuse; eyes placed far back.

ANTENNÆ 11-jointed, 3 apical much incrassated, forming a moniliform club.

PRONOTUM sub-quadrate.

ELYTRA entire.

MESOSTERNUM broadly carinate.

METASTERNUM long and narrow, not reaching the sides of the body.

LEGS rather long, tibiæ slightly dilated.

POSTERIOR COXÆ largely laminated.

M. lineatum Motschulsky Bull. Mosc. 41, p. 189, 1869.—L. c. .37—.50 mm. —Oval, rather short, very convex and very shining, bright yellow, clothed with short golden pubescence; head elongate; eyes small, prominent; thorax rather longer and rather wider than the head, slightly constricted towards the base, rather thickly marked with foveolate punctures, posterior angles nearly right angles; elytra rather short, obtusely ovate, transparent, showing the wings, scarcely longer, but rather wider than the head and thorax, widest before the middle, rather deeply asperate, apex broad and rounded; antennæ moderate, robust, bright yellow; legs long and slender, bright yellow, anterior tibiæ and basal joints of the tarsi dilated.

Central America in ant nests (Motschulsky).

NANOSELLA.

Motschulsky Bull. Mosc. 41, p. 172, 1868.

BODY elongate, linear.

HEAD large, sessile.

ANTENNÆ short, 11-jointed, 2 basal joints very large, 3 apical joints very much incrassated, forming an almost solid club.

PRONOTUM short, widest at the base.

ELYTRA entire, very long, rounded at the apex.

ABDOMEN with the pygidium exposed.

MESOSTERNUM small, widely carinated.

METASTERNUM large, produced between the posterior coxæ into a sharp point.

LEGS rather short.

POSTERIOR COXÆ very broadly laminated.

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N. fungi Motschulsky Bull. Mosc. 41, p. 187, 1868.—L. c. .26 mm.—Linear, elongate, moderately convex, rufo-testaceous, clothed with a very short yellow pubescence; head large; eyes large, not prominent; thorax scarcely longer or wider than the head, with the basal angles nearly right angles; elytra long, linear, not wider, but nearly twice as long as the head and thorax, faintly asperate, apex broad, much rounded; legs and antennæ yellow.

United States (Motschulsky).

THROSCIDIUM.

Matthews Trich. Illust. p. 64, 1872.

HEAD sessile, antennæ 11-jointed, 2 basal joints large, 2d longer than the 1st, 3–8 slender and elongate, last 3 very much incrassated, forming a moniliform club.

THORAX moderate, dilated at the base, posterior angles generally produced.

ELYTRA entire, generally obtuse at the apex.

ABDOMEN with the pygidium only exposed.

PROSTERNUM very short, with the coxal cavities open.

MESOSTERNUM rather short, very strongly carinated, coxal cavities separated by the carina.

METASTERNUM long, produced between the posterior coxæ into a small acute point.

POSTERIOR COXÆ extending to the sides of the body, and very broadly laminated.

VENTRAL SEGMENTS seven.

T. invisibile *Trichopteryx invisibilis*, Nietner, Ann. and Mag. Nat. Hist. New Series xix, p. 378, 1856. *Anatrichis clongatula*, Motsch. Bull. Mosc. 41, p. 180, 1868.—L. c. .50 mm.—Elongate, oval, convex, rather shining, livid testaceous, densely covered with silvery pubescence; head large, sessile; eyes small, rather prominent; thorax short, dilated at the base, closely covered with minute tubercles, posterior angles nearly right angles; elytra long, not wider, but half as long again as the head and thorax, elegantly and reticulately asperated, apex broad and rounded; legs and antennæ very pale yellow.

Central America (Motschulsky), Guatemala (Champion).

NOSSIDIUM.

Erichson Ins. Deutsch. 3, p. 17, 1845.

BODY oval.

ANTENNÆ 11-jointed, 1–2 very large, 3–8 slender, 9–11 much incrassate, forming a moniliform club.

HEAD sessile, deflexed.

PRONOTUM large, dilated towards the base.

ELYTRA entire.

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ABDOMEN entirely covered by the elytra.
MESOSTERNUM short, carinated, carina very short.
METASTERNUM rather short, not extending to the sides of the body.
VENTER 7 segments.
LEGS moderate.
POSTERIOR COXÆ almost contingent, rather narrowly laminated.

N. Americanum Motschulsky Bull. Mosc. 41, pl. 2, p. 191.—L. c. 1 mm.—Oblong, oval, very convex and shining, sparingly clothed with rather long yellow hairs; head and thorax pitchy black; elytra bright rufous; head large; eyes prominent; thorax rather short, moderately dilated at the base, very shining, faintly and remotely punctured; sides rounded and margined, margins yellow, posterior angles nearly right angles; elytra rather long, oval, more than half as long again, but not wider than the head and thorax, rather deeply punctured in transverse sinuated rows, apex broad, much rounded; antennæ rather short; legs and antennæ bright yellow.

United States (Motschulsky).

N. posthumum Matthews Cist. Ent. xi, p. 298, 1871.—L. c. .75 mm.—Oval, very convex, shining, testaceous, clothed with short yellow pubescence; head and thorax very shining, remotely punctured; thorax widest at the base, with the sides moderately rounded and widely margined, basal angles rather acute; elytra widest at the shoulders, rather longer, but not wider than the head and thorax, deeply asperate in transverse sinuated rows, apex obtuse; legs and antennæ yellow.

Differs from *N. Americanum* in its minute size and narrow form, and also in sculpture.

United States (Crotch), one specimen.

List of North American Trichopterygidæ.

HYDROSCAPHINA.

Hydroscapha Lec.

natans Lec.

TRICHOPTERYGINA.

Ptinella Motsch.

Championana Matth.*
pellucida Matth.*
Pini Lec.
Quercus Lec.
incerta Matth.*

Championella Matth.

nubigena Matth.*

Pterycodes Matth.

Salvinii Matth.*

Pteryx Matth.

Du Valii Matth.
balteata Lec.
brunnea Lec.

Ptinellodes Matth.

LeContei Matth.

Limulodes Matth.

paradoxus Matth.

Myrmicotrichis Motsch.

æquatorialis Motsch.*

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Trichopteryx Kirby.
Schaumii Matth.
Haldemanni Lec.
Godmanni Matth.*
grossa Motsch.*
Alliberti Matth.*
lucida Matth.*
glabricollis Matth.
Dohrnii Matth.
similior Matth.*
discolor Hald.
Crotchii Matth.*
rufescens Matth.*
atomaria De Geer.
glauca Matth.*
laticollis Man.
angustipennis Matth.*
crassicollis Matth.
sitkaensis Motsch.
Henrici Matth.
abrupta Hald.
excelsa Matth.*
minor Matth.*
grandicollis Man.*
cognata Matth.
fascicularis Herbst.
Josephi Matth.
diffinis Matth.
brevior Matth.*
parallelopipeda Matth.
xanthocera Matth.
Hornii Matth.
Californica Matth.
sericans Heer.
castanea Matth.
bidilatata Matth.*
vicina Matth.
parallela Motsch.
nigrita Matth.*
aspera Hald.
ambigua Matth.
vitrea Matth.*
mœrens Matth.
Aubei Matth.

Smicrus Matth.
filicornis Fairm.

Nephanes Thoms.
pubescens Matth.*
læviusculus Matth.
flaviventris Motsch.*

PTILIINA.

Ptilium Erichs.
Collani Mäk.
Hornianum Matth.
tropicum Matth.*
planum Matth.*
obscurum Matth.
humile Matth.
Columbianum Matth.
Sharpi Matth.

Millidium Motsch.
triramosum Motsch.*

Actidium Matth.
Fowlerianum Matth.*
politum Matth.
Crotchianum Matth.

Ptenidium Erichs.
strangulatum Matth.*
foveicolle Lec.
Mannerheimii Matth.
ignobile Matth.*
nitens Matth.*
foveatum Matth.*
pullum Mann.
evanescens Marsh.
impunctatum Matth.*
obesum Matth.*
speculifer Matth.
Ulkei Matth.

Motschulskium Matth.
sinuatocolle Matth.

Micridium Motsch.
lineatum Motsch.*

Nanosella Motsch.
fungi Motsch.

Throscidium Matth.
invisibile Niet.*

Nossidium Erichs.
posthumum Matth.
Americanum Motsch.

Species marked * have not yet occurred within the United States.

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Notes on the species of ANOMALA inhabiting the United States.

By George H. Horn, M.D.

The species of *Anomala* occurring within our faunal limits may be divided into three series, which have been considered genera by some authors.

Metasternum not protuberant, the middle coxæ narrowly separated.
Tarsal claws in part cleft.....Anomala.
Tarsal claws all simple.....Rhombonyx.
Metasternum protuberant, middle coxæ rather widely separated.....Spilota

Sub-genus Anomala.

This division is the most numerously represented in our fauna. The species are separated in the following manner:

Front claw of the anterior and middle tarsus very distinctly cleft at tip.....2.
Front claw of the anterior tarsus scarcely cleft, the small division being much within the tip.....**parvula.**
2.—Claw joint of anterior tarsi distinctly toothed beneath.....3.
Claw joint of anterior tarsi not toothed.....5.
3.—Clypeus concave, the margin rather widely reflexed; thorax always uniformly reddish yellow in color.....**flavipennis.**
Clypeus flat, margin narrowly reflexed; thorax either bicolored or entirely piceous.....5.
4.—Sides of clypeus nearly parallel; thorax rather finely punctured.
Thorax uniform in color, piceous with bronze surface lustre.....**binotata.**
Thorax testaceous, with a triangular spot of varible size placed with its basae at the apical margin.....**centralis.**
Sides of clypeus divergent posteriorly, the clypeus nearly semicircular, thorax coarsely punctured.....**minuta.**
5.—Elytra variable in color, sometimes entirely testaceous, but when marked with piceous the spots are arranged in transverse bands.....**undulata.**
Elytra variable, sometimes entirely piceous; when bi-colored the piceous spaces indicate longitudinal vittæ; intercostal intervals very irregularly punctured.....**lurida.**

A. parvula Burm.—Form oblong, testaceous; vertex and two thoracic spots piceous. Clypeus transverse; sides oblique, margin narrowly reflexed, surface punctate. Thorax transverse, narrower in front; sides regularly arcuate, base distinctly margined; surface very sparsely punctate. Elytra with striæ of coarse punctures feebly impressed, the intervals scarcely elevated and nearly equal. Pygidium sparsely punctate. Body beneath nearly smooth. Length .30 inch; 7.5 mm.

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The front claw of the anterior tarsus is cleft at some distance behind the tip, and so feebly that it might escape observation. The claw joint of the tarsus is toothed at middle beneath. The middle front claw is cleft at tip, the two portions nearly equal.

To this species, also, I refer two specimens from Arizona, which differ in having the front more densely punctured, the thoracic spots larger, and the suture and lateral margins of the elytra narrowly brown. By its peculiar anterior claws this species is very readily known.

Occurs in the Gulf States and Arizona.

A. flavipennis Burm.—Moderately robust, rufescent; elytra testaceous, rarely with darker spaces. Head moderately densely punctured. Clypeus broader at base, margin rather widely reflexed. Thorax transverse, narrower in front; sides regularly arcuate, base distinctly margined; surface sparsely punctured; sometimes with a vaguely impressed median line. Elytra punctured, very few of the striæ are regular, three intervals more distinctly sub-costiform. Pygidium rather coarsely punctured. Body beneath nearly smooth, with very few punctures, pectus and costal plates hairy. Length .40—.44 inch; 10—11 mm.

The anterior claw of the front tarsus is but little shorter than the posterior, the tip is cleft, the two portions not very unequal, the base flexed. The claw joint is rather strongly toothed beneath. The anterior middle claw is cleft at tip, the upper portion much more slender, but equal in length to the inferior.

The pale testaceous elytra enable the greater number of specimens to be recognized at once. Specimens occur in North Carolina with the elytral punctuation somewhat coarser and deeper, and the costiform intervals have in the basal region linear piceous spots. In the darker specimens the thorax has a slight æneous tinge.

Occurs in the Southern States.

A. binotata Gyll.—Form moderately robust, piceous; thorax dark bronze, shining; elytra yellowish testaceous, the suture and margin narrowly bordered, and usually on each side two piceous spots. Head rather densely punctured. Clypeus scarcely broader at base, the margin narrowly reflexed. Thorax narrowed in front; sides arcuate, disc convex, sparingly punctured, toward the sides more densely and with a larger foveate puncture. Scutellum bronzed. Elytra, with striæ, of coarse punctures, somewhat confused in the sutural region, three of the intervals very slightly more elevated. Pygidium rather densely rugulose, and with short hairs. Body beneath coarsely, not densely punctured, pectus, coxal plates and sides of abdomen hairy. Length .40—.44 inch; 10—11 mm.

The claw joint of the anterior tarsi is distinctly toothed beneath. The anterior claw is flexed at base, the tip cleft, the upper portion quite slender, and a little shorter than the lower. The anterior claw of the middle tarsus is cleft at tip, the two portions nearly equal.

The specimens from the eastern and northern parts of our territory have the elytra more decidedly sculptured, and the two elytral spots well marked. Specimens occasionally found have the sutural region near the apex broadly piceous, the color extending often widely around the apical

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border. From Arizona and Texas specimens occur with the elytra much smoother and more shining and without the usual spots. These are the variety *lutcipennis* Lec.

Occurs from the Middle States to Arizona.

A. centralis Lec.—Form moderately robust, testaceous; head rufescent, thoracic triangular space, suture and margin of elytra brownish; head densely punctured; clypeus slightly broader at base, the margin narrowly reflexed; thorax transverse, narrowed in front; sides arcuate, base distinctly margined, except sometimes at middle; surface very sparsely and finely punctured, testaceous, with an irregular triangular brown space, the base at the apical margin; elytra with regular striæ of moderately coarse punctures, somewhat confused near the suture, the intervals nearly equal, not elongated; pygidium sparsely, obsoletely punctured; body beneath sparsely punctate, pectus and coxal plates hairy. Length .36—.44 inch; 9—11 mm.

The claw joint of the front tarsus is toothed beneath; the anterior claw is flexed at base, the tip unequally cleft, the upper portion more slender and shorter than the lower; the anterior middle claw is nearly equally cleft at tip.

The specimens from which the species was originally described were collected in the Peninsula of California. They are of the smaller size indicated above. The thoracic spot is quite regularly triangular. The suture at base is very narrowly brown; at the apical half that color becomes broader, and continues around the apex and side to the humeral umbone. From Arizona and Sonora the specimens referred to this species are somewhat longer, the thoracic spot more extended. The scutellum is often darker, but the suture and side margin of the elytra are extremely narrowly bordered with fuscous. The species can hardly be mistaken for any other in our fauna, as its characters are quite constant.

Occurs in Arizona, Sonora, and the Peninsula of California.

A. minuta Burm.—Form oval, rather robust, color very variable, sometimes entirely black, often more or less testaceous, with a large thoracic space and transverse elytral fasciæ piceous; head moderately densely punctured; clypeus nearly semi-circular in outline, the sides divergent posteriorly, the margin narrowly reflexed; thorax transverse, convex, narrower in front; sides arcuate, base margined; surface coarsely and rather deeply, but not densely punctured; elytra, with striæ, of coarse, deep, closely-placed punctures; those near the suture somewhat confused, the intervals equal, not at all elevated; pygidium rugulose in front, smoother at apex; body beneath coarsely and sparsely punctured, not hairy. Length .26—.30 inch; 6.5—7.5 mm.

The claw joint of the front tarsus is very distinctly toothed beneath when viewed laterally; the claws are stout and large, the anterior deeply cleft at tip, the two portions very nearly equal; the front claw of the middle tarsus is feebly cleft at tip, the two portions nearly equal.

As indicated above, the species is extremely variable in color. In the specimens which are black or piceous, the abdomen is always rufescent.

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The most abundant form has the sides of the thorax broadly testaceous, and the elytra are piceous, with a basal and post median transverse testaceous band of irregular outline. These have the body beneath and legs testaceous. The great variability of its coloring makes this species one not easy to define. It is usually found in cabinets mixed with the smaller forms of *undulata*, and it is with this species and *semilivida* that it is most likely to be confused. The latter species belongs to the Rhombonyx series, and should therefore be easily excluded. From *undulata* the present species is distinguished by its shorter and more robust form, the punctuation of the surface convex and deeper. In *undulata* it is rare to find even a trace of tooth at the middle of the claw joint of the front tarsus beneath, and the anterior claw is scarcely flexed at base, and the cleft portions of the tip nearly equal.

Occurs in the Middle and Southern States.

A. undulata Mels.—Form elongate, oval; color variable; head densely punctured anteriorly; margin of clypeus narrowly reflexed, the sides divergent, the angles broadly rounded; thorax narrowed in front; sides regularly arcuate, base distinctly margined; surface variably punctured, sometimes rather finely, at others more coarsely; scutellum coarsely punctured; elytra, with striæ of moderately coarse punctures, somewhat confused near the suture, the intervals nearly equal; three, however, somewhat more distinctly elevated; pygidium rugulose, or evenly punctured; body beneath sparsely, but rather coarsely punctured with very little pubescence. Length .30—.40 inch; 7.5—10 mm.

The claw joint of the front tarsus is scarcely at all toothed beneath, the anterior claw is but little flexed at base, the tip cleft into two nearly equal portions; the anterior claw of the middle tarsus is equally cleft at tip.

This species is extremely variable in color. The first striking variation is in the punctuation of the thorax. In the specimens from the more northern region of our country and from as far south as Virginia, the thorax should be called coarsely punctured, it is nearly as much so as in *minuta*, while the more southern specimens are quite smooth, and as in *binotata*. These seem climatic varieties, and can not be separated as species. In the color of the surface the variation is very great. Specimens occasionally appear of entirely pale, testaceous color, with only a thoracic spot fuscous; these resemble, slightly, *centralis*. The under side of the body is, as a general rule, testaceous, but specimens have been found with the abdomen piceous. The thorax has always a large median space, fuscous, the sides pale; the fuscous portion has a purplish or bronze surface lustre. The elytra are rarely entirely testaceous, usually there are two series of fuscous spots arranged in arcuate rows, the one about the middle the other posteriorly. The spots often become confluent, forming distinct and continuous fasciæ. The only species with which

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this might be confounded is *minuta*, the smaller specimens being rather difficult to separate.

Occurs in the Middle and Southern States.

A. lurida Fab.—Form rather robust, color variable; head rather densely and coarsely punctured; clypeus short, broader at base, the angles broadly rounded, margin narrowly reflexed; thorax narrowed in front; sides regularly arcuate, basal marginal line distinct; surface sparsely punctate; elytra, with three intervals regular and sub-costiform, the interspaces rather densely and irregularly punctured; pygidium sparsely punctate; body beneath shining, very sparsely punctate, pectus not hairy. Length .50 inch; 12.5 mm.

The claw joint of the front tarsus is not toothed beneath, the anterior claw deeply cleft at tip, the two parts nearly equal; the front claw of the middle tarsus is cleft at tip, the two portions equal.

This species, like several others in our fauna, extends southward into Mexico, and even to South America. I have seen but two specimens from New Mexico and Arizona which agree quite well in their color, but Burmeister describes the species as being one of great variability in color. Our specimens may be described as piceous, the legs, except the tarsi, yellow. The thorax is broadly margined and testaceous as in *undulata*, there being also near the side margin a piceous spot surrounding a large puncture. The elytra are entirely brownish except three testaceous vittæ which follow the line of the costæ. From Burmeister's description the elytra are sometimes testaceous with brownish vittæ, thus reversing the relations of the colors given above. It is evident that the colors here arrange themselves in longitudinal vittæ on the elytra, and do not form spots which coalesce into transverse bands.

This species is the only one in the present genus in which the spaces between the sub-costiform intervals are punctured in a confused manner.

New Mexico and Arizona.

Sub-genus RHOMBONYX.

Two species occur in our fauna; in both the clypeus is rather deeply concave, and the margin more reflexed than in the other species of the genus.

Clypeus transverse, at least twice as wide as long, vertex sparsely punctured; above varicolored ..... **semilivida.**

Clypeus very little wider than long, rather densely punctured; body above uniformly yellowish ..... **cavifrons.**

A. semilivida Lec.—Oblong, oval, color variable; head moderately or sparsely punctured; clypeus short, transverse, semicircular, margin widely reflexed; thorax transverse, rather suddenly arcuate from the middle to the apex, disc sparsely punctate, base with a distinct marginal line; elytra with striæ of

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feebly impressed punctures, the inner of the usual sub-costiform intervals alone distinctly elevated; pygidium nearly smooth or sparsely punctate; body beneath sparsely punctate, pectus hairy. Length .26—.28 inch; 6.5—7 mm.

The claws of all the tarsi are simple and slender.

The color is variable. In the typical forms from Florida the general color is testaceous, the head and an irregular thoracic space piceous. A specimen in my cabinet is entirely piceous with the sides of the thorax alone testaceous. Another with head and thorax rufescent has the sides of the elytra brownish. Others have the suture narrowly, and the sides of the elytra more widely brownish. From this it is evident that the markings have a tendency to a longitudinal and not a fasciate arrangement.

Occurs in Georgia and Florida.

A. cavifrons Lec.—Oblong, oval, uniformly yellowish testaceous; front densely punctured; clypeus very little wider than long, the angles rounded, margin rather widely reflexed; surface less punctured than the front, the frontal suture distinctly carinate; thorax narrowed in front; sides arcuate, widest at middle, sparsely punctate, a vague median line near the front, basal marginal line distinct; elytra feebly striate, the striæ very obsoletely punctured, the intervals slightly convex; pygidium nearly smooth; body beneath very sparsely punctate, pectus slightly hairy. Length .40 inch; 10 mm.

Tarsal claws are simple.

I have seen about ten specimens of this species of uniform color. It is remarkable by the feeble punctuation of the elytra and the cariniform frontal suture.

Occurs in Texas and New Mexico.

Sub-genus SPILOTA.

From the material of our fauna this division seems fully entitled to generic value, but in deference to the views of Burmeister and Lacordaire is retained in its present situation. The basal marginal line of the thorax which exists in the preceding sub-divisions is entirely wanting here.

Pygidium sparsely punctured, rather shining, with very little or no pubescence.
Thorax with sparse punctuation, between which the surface is shining. **lucicola.**
Thorax rather densely and coarsely punctured, sub-opaque..... **oblivia.**
Pygidium rather densely punctured, not shining, densely pubescent. **marginata.**

A. lucicola Fab.—Form oval, robust; color variable from entirely yellow to entirely black; head moderately densely punctured; clypeus transverse; sides very little divergent, angles rounded, margin in front narrowly reflexed; thorax convex; sides regularly arcuate, gradually narrowed to the point, basal marginal line obliterated, surface rather coarsely but not densely punctured; elytra with

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moderately deep striæ of rather coarse, closely-placed punctures, the intervals nearly equally convex; pygidium sparsely punctured; body beneath coarsely but sparsely punctured, the pectus very slightly hairy. Length .36—.40 inch; 9—10 mm.

The front claw of the anterior and middle tarsi is deeply cleft at tip, the two portions nearly equal.

When the color is pale yellow the legs and antennæ are the same, the metasternum being the only portion a little darker in color. When entirely black only the stem of the antennæ is pale. The thorax has often a large discal piceous space, which is sometimes broadly divided at its middle.

Occurs most abundantly in the Northern and Middle States.

A. oblivia n. sp.—Oblong, oval, moderately robust; surface feebly shining with very faint aeneous lustre, general color rufescent, the disc of thorax darker; head rather densely punctured; clypeus short and broad; sides divergent posteriorly, anterior border narrowly reflexed; thorax narrowed in front; sides regularly arcuate, basal marginal line distinct at the sides, disc convex, rather densely and coarsely punctured; elytra with striæ of deep, coarse, closely-placed punctures, the intervals nearly equal on the disc, those near the sides more elevated and sub-costiform; pygidium sparsely punctured; body beneath sparsely punctured, and with short hairs on the pectus. Length .34—.44 inch; 8.5—11 mm.

The anterior claws of the middle and front tarsi are cleft at tip, very unequally on the front tarsus, and very feebly on the middle.

This species is less robust in facies than either *lucicola* or *marginata*. The surface is slightly aeneous, which is never the case in *lucicola*, and more opaque, and the thorax more coarsely punctured than in either of those mentioned.

Occurs from Pennsylvania to Georgia.

A. marginata Fab.—Oval, robust, pale rufescent, disc of thorax and head darker; surface with aeneous lustre; head densely punctured; clypeus short, broader at base, margin narrowly reflexed; thorax narrower in front; sides arcuate, base not margined, color brownish, broadly margined at the sides with testaceous; surface coarsely but sparsely punctured; elytra rather deeply striate with coarse, closely-placed punctures, the second stria composed of a double row of punctures, intervals equally convex; pygidium densely rugulose and pubescent; body beneath sparsely punctured, pectus slightly hairy. Length .44—.60 inch; 11—15 mm.

The front claws of the anterior and middle tarsi are cleft at tip, the two portions nearly equal.

This species shows very little variation, nothing beyond the size and a little darkening of the color.

Occurs in the Southern States.

In addition to the above species there is one described by Fabricius, and figured by Olivier, which is uncertain, *Melolontha innuba*. Burmeister considers it a *Spilota*, and says that is a Mexican species. It

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does not appear that he saw the Fabrician type which belonged to Dr. Hunter. From what I can gather from the description of Fabricius and Olivier with the figure given by the latter, I am inclined to believe it one of the varieties of *minuta*, Burm. Until the matter can be determined by reference to the type, the Fabrician name will be placed in doubt under *minuta*..

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Synopsis of the United States species of NOTOXUS and MECYNOTARSUS.

By George H. Horn, M. D.

NOTOXUS Geoff.

Since the publication of the Synopsis of the Anthicides by Dr. LeConte (Proc. Acad. 1852), material has accumulated, and from want of proper study, was so arranged in our cabinets as to indicate a great number of undescribed species, the variations in color affording a basis for an indefinite division.

As a general rule variations of color and markings are the least reliable means for the separation of species, and should be made use of only when supported by other characters. Structural characters are much more definite and positive in their nature. It is true that these are not always easy to discover, but patient study will often make plain what has been passed over as inextricable. Modifications of structure of a sexual nature are very constant, practically invariable within specific limits, and afford the means of at least grouping species in series, and very often of separating species otherwise very closely allied. The use of sexual characters has been objected to on the ground that in a cabinet the particular sex used may not be present, and specimens of the opposite sex may be almost indeterminable. The objection is certainly valid as far as the naming of specimens is concerned, but it must not be forgotten that the aim of a paper like the present when dealing with a more or less intricate subject is to indicate the characters, by means of which species are distinguished, and the possessor of a few specimens must await the acquisition of the required sex or have the specimens determined by comparison.

In the arrangement of the species known to him Laferté divided *Notoxus* into four groups based on the style of elytral ornamentation. One of his groups is entirely without value as many species of his other groups may have unspotted elytra. In glancing over large series of our species three types of elytral markings appear: *first*, elytra totally black, opaque, finely punctured; *second*, elytra piceous, with two transverse yellow bands; *third*, elytra more or less testaceous, with a piceous band and various spots or stripes. In the first and second there is but one species to each,—*bicolor* and *bifasciatus*. In the third group *anchora*

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may be assumed as the most perfect development of the type. There is a transverse band about one-third from the apex consisting of a broadly crescentic division on each elytron; these join at the suture, and extend forward, forming a common sutural band broadest in front, a lateral elongate spot is seen behind the humeral protuberance. It is easy to trace the development of the markings observed in the other species from this form by the interruption of the sutural stripe and a narrowing or interruption of the band or by an extension and suffusion of all the markings. As these modifications run almost insensibly from one into another it is absolutely impossible to separate species by them. In fact the markings on the elytra can only be described in the most general way.

The sexual characters give the only sure means of separating the species into groups in any respect natural. It is consequently necessary before attempting any study of the species to determine the sexes of the specimens. The males have usually decided characters, the females are known only negatively, having but rarely special characters. The males of all the species have certain characters in common. The pygidium is obtuse or truncate at tip, and a small additional segment is visible beyond it, the last ventral is more obtuse than in the female, and is usually more or less impressed or even with a large fovea (*nuperus*).

In five species the male elytra are obliquely truncate, so that the sutural angle is retracted, the outer angle formed by the truncation is sub-spinous. In the other species the elytra are separately or conjointly rounded. One species (*calcaratus*) has a well marked tooth near the middle of the inner side of the front tibiæ. The thoracic horn is usually narrower and more parallel in the male, but this is not always easy to detect, and in *anchora* absolutely fails.

In the females very little has been observed. The tips of the elytra are very distinctly truncate in *talpa*, and in *anchora* nearly as much so.

In four of the species the elytra are impressed behind the base, as a general rule more distinctly in the males than in the females.

The vestiture of the surface is of two kinds,—a fine, short, recumbent pubescence, and a coarse hairyness. With the former it is rare to see any erect hairs, and then they are very inconspicuous, while in the coarsely hairy species long erect hairs are constantly present.

The thoracic horn, as already stated, varies with the sex in its form. Within specific limits there is considerable variation in the degree and extent of the serration of its margin, so that it is as useless to attempt the separation of species on this basis as on the elytral markings. The crest varies usually less than the horn, but from a fair degree of promi-

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nence it may become nearly obsolete, as in *monodon*. The crest seems to be normally absent in one species, *planicornis*.

With these preliminary words the following table of our species is presented:

Elytra rounded at tip in the male ..... 2.
Elytra obliquely truncate at tip in the male ..... 10.
2.—Pubescence fine, recumbent, very rarely a few short semi-erect hairs in series ..... 3.
Pubescence coarse, with many conspicuous erect hairs either irregularly placed or in series ..... 8.
3.—Thoracic horn distinctly cristate ..... 4.
Thoracic horn without crest ..... 7.
4.—Elytra black, uniform in color ..... **bicolor.**
Elytra variegated ..... 5.
5.—Last ventral of male with a large deep fovea, elytra in both sexes conjointly rounded ..... **nuperus.**
Last ventral of male simply impressed ..... 6.
6.—Elytra sub-opaque, truncate in the female ..... **talpa.**
Elytra shining, conjointly rounded at tip in both sexes ..... **bifasciatus.**
7.—Elytra moderately densely punctured ..... **planicornis.**
8.—Thorax relatively small, horn very narrow ..... **apicalis.**
Thorax normal, the horn rather wide and distinctly serrate ..... 9.
9.—Anterior tibiæ of male toothed at middle on the inner side, elytra fasciate at middle ..... **calcaratus.**
Anterior tibiæ of male simple, elytra fasciate slightly behind the middle. **monodon.**
10.—Thoracic horn broad, wider than its crest, and always serrate ..... **serratus.**
Thoracic horn narrow, rarely wider than the crest, very feebly or not at all serrate ..... 11.
11.—Crest of horn badly defined, not distinctly margined, very feebly elevated. **anchora.**
Crest of horn distinctly elevated, well margined at least at the sides ..... 12.
12.—Thorax nearly truly globose.
Elytra parallel, coarsely punctured ..... **denudatus.**
Elytra slightly oval, sparsely punctured ..... **conformis.**
Thorax transverse, elytra oval ..... **cavicornis.**

N. bicolor Say.—Black, thorax and legs rufo-testaceous; head finely punctured and pubescent, the front concave; antennæ rufous, somewhat darker externally; thorax oval, very slightly broader than long, the horn moderate in length, rather broad, obtuse at tip, the sides coarsely serrate, crest feebly elevated, scarcely margined, but serrate: surface of thorax finely sparsely punctured, the pubescence silken and recumbent; elytra oblong, humeri distinct; surface opaque black, finely but not densely punctured, clothed with a fine cinereous recumbent pubescence, in which are placed slightly longer hairs, very little erect, arranged in rows; spices of elytra conjointly rounded and exactly alike in the two sexes; beneath opaque, very finely punctured, and clothed with cinereous hairs. Length .14 inch; 3.5 mm.

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The sexual differences are extremely slight. The male has the last ventral segment truncate at tip, in the female it is oval. The thoracic horn is also a little wider in the female.

Occurs in the Atlantic States, and is at times very abundant.

N. nuperus n. sp.—Form moderately elongate; head piceous, front flat or slightly concave; surface finely punctulate and pubescent; thorax transversely oval, rather coarsely, not densely punctate, sparsely and finely pubescent, horn moderately wide, distinctly margined at apex, scarcely serrate at the sides, crest rather abruptly elevated, one-half the width of the horn, distinctly margined but not serrate; elytra oblong, opaque, finely and densely punctured, pubescence fine and entirely recumbent; humeri distinct, apices conjointly rounded in both sexes, the sutural angle being slightly obtuse; color reddish testaceous, apical fourth black, near the middle a transverse band, broadest externally, and which extends broadly along the suture enclosing the usual scutellar spots; body beneath piceous, finely punctulate, and with fine cinereous pubescence; legs piceous, tibiæ and tarsi paler. Length .14 inch; 3.5 mm.

The sexes are alike in the form of tha elytra at tip, and do not differ appreciably in the form of the tharacic horn. The last ventral segment of the male has an unusually large and deep excavation extending from the tip to the preceding segment.

The color varies but little. The thorax may be piceous or rufous. The elytral markings are very constant in their extent and form in the dozen specimens before me. The type of marking is the same as that of *talpa*.

The only species resembling this is *talpa*, and the two may be known by the sexual characters, the female of *talpa* having truncate elytra, while the male of *nuperus* has the deep fovea in the last ventral segment.

Occurs in Arizona (Morrison), New Mexico and Kansas.

N. talpa Laf.—Beneath piceous; thorax, antennæ and legs testaceous; elytra testaceous, with post-scutellar spots, median sinuous band and apical space piceous: head piceous, sparsely punctate, front rather deeply concave, very sparsely pubescent: thorax oval, distinctly transverse, punctulate, sparsely pubescent, subopaque, horn moderate in length, oval at tip, rather widely margined and serrate feebly at the sides, crest abruptly elevated, strongly margined and slightly crenulate: elytra rather elongate, humeri distinct, the apices separately rounded in the male, or truncate in the female; disc distinctly obliquely impressed behind the humeri in the male, scarcely so in the female; punctuation fine but not dense, pubescence fine, cinereous and recumbent, with a few short semi-erect hairs; body beneath rather densely punctulate and sparsely pubescent. Length .14 -.16 inch; 3.5—4 mm.

In the male the last ventral segment is truncate and slightly emarginate, the apices of the elytra separately rounded, and the thoracic horn very little wider than the crest. In the female the apices of the elytra are sinuate truncate, the sutural angle being sharply rectangular.

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The elytral marking are very variable. The general color is testaceous, with a scutellar spot on each side, a fascia exactly median, which, when entire, sends a process forward on the suture, the apical third is also piceous, the anterior border of this space is deeply concave forward. Some of the paler varieties resemble *monodon*, while the darker forms approach *bifasciatus*.

With this species I have no hesitation in uniting *subtilis* Lec. and *elegantulus* Laf. The latter species was obtained by Laferté from the same collection, and from the description and the series of specimens before me I am convinced that *elegantulus* is one of those males in which the oblique humeral impression is unusually well marked.

It may be well here to note that *talpa* and *elegantulus* were collected by Piccolomini, and all his specimens were credited to California. I have already had occasion to express my views that none of the specimens were collected in California as at present understood, and these add another link to the chain of evidence.

Occurs from Montana to Texas, and from Illinois to Colorado.

N. bifasciatus Lec.—Piceous, shining, pubescence sparse and fine; elytra piceous, with two yellow fasciæ, the anterior nearly transverse, divided by the suture, the posterior at apical third interrupted by the suture and oblique; head piceous, sparsely punctulate and rather shining, pubescence very sparse, front flat, not concave; antennæ ferruginous; thorax globose, slightly transverse, sparsely but distinctly punctate, very sparsely pubescent, shining, horn moderate in length, distinctly margined, feebly serrate at the sides, oval at tip, crest abruptly elevated, distinctly margined, not serrate; elytra oblong, humeri distinct, apices conjointly rounded in both sexes; disc transversely impressed behind the base; surface finely not densely punctulate, finely pubescent, and with few short semi-erect hairs; body beneath finely punctulate and sparsely pubescent. Length .12—.14 inch; 3—3.5 mm.

In the male the last ventral segment is truncate, and with a very slight impression. The thoracic horn is much narrower in the male, so that the crest is very nearly as wide as the horn itself.

This species shows very little variation beyond what may be considered a greater or less maturity of the specimens, the thorax and legs being at times quite red, at others piceous. The bands of the elytra are quite constant in their position and size, and the post-basal transverse impression is always well marked in both sexes. The pubescence on the elytra imitates the color of the surface, from which it arises. I refer a specimen with entirely piceous elytra; to this species, it was collected in Colorado.

Occurs everywhere from Canada to Arizona, and westward to the Rocky Mountains.

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N. planicornis Laf.—Moderately elongate, rufo-testaceous, finely pubescent; elytra with scutellar spot, median and ante-apical bands piceous; head rather shining, very sparsely punctulate, scarcely pubescent, front concave; thorax nearly spherical, shining, very sparsely finely punctured, and with very little pubescence, horn stout and broad, margined, serrate at the sides, the crest not elevated, its margin indicated by a few slight tubercles; elytra oblong, humeri distinct, apices conjointly rounded; disc distinctly obliquely impressed behind the humeri; surface moderately shining, punctuation moderate, not dense; body beneath extremely finely punctured and sparsely pubescent. Length .12 inch; 3 mm.

The male has the last ventral segment truncate at tip with a slight triangular impression.

This species greatly resembles *monodon*, especially that form with feeble crest. It may, however, be known by the very fine pubescence, without trace of erect hairs, and by the oblique impression of the base of the elytra.

One specimen, Capron, Florida.

N. apicalis Lec.—Elongate, testaceous; elytra with scutellar spots, post-median sinuous band and apex piceous; head sparsely punctulate and pubescent, with very few erect hairs, front flat; thorax relatively small, globose, sparsely punctulate and shining, feebly pubescent, horn rather narrow, strongly margined in front, the sides feebly serrate, crest suddenly and rather strongly elevated, margined, not serrate; elytra rather elongate, humeri distinct, apices conjointly rounded in both sexes, feebly shining, moderately punctate, the punctures much finer at apex, pubescence rather short and recumbent, intermixed with erect hairs arranged in rows, markings closely, resembling *monodon*, with the tip also piceous; body beneath very finely punctulate, and with fine silken pubescence. Length .16 inch; 4 mm.

The thoracic horn is plainly narrower and longer in the male, and less obviously serrate at the sides. The last ventral segment is very distinctly truncate and transversely concave, but not foveate.

The markings on the elytra are very nearly those of *monodon*, with the addition of an apical piceous border, which in some specimens extends narrowly along the suture, and even the sides, to join the transverse band.

To this species I refer some specimens from the high Sierras of California, which have the thoracic horn a little wider and the pubescence coarser. The elytral marks have nearly entirely disappeared.

Occurs from Michigan to Kansas, Texas and California.

N. calcaratus n. sp. –Rufo-testaceous, coarsely pubescent; elytra with apex, median broad sinuous fascia and scutellar spots piceous: head sparsely punctate, front slightly concave, sparsely clothed with hair, much of which is erect; thorax transversely oval, sparsely rather finely punctate, the horn broad and stout, distinctly margined and coarsely serrate at the sides; crest abruptly elevated,

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strongly margined, not serrate, a distinct carina within the crest; elytra oblong, humeri distinct, apices conjointly rounded in both sexes: surface slightly shining, moderately, densely, finely punctulate, clothed with rather coarser hair, much of which is long and erect, color rufo-testaceous, the apex narrowly black, a transverse band at middle, broadest at the suture and entire, and a small scutellar spot on each side of the same color; body beneath rufo-testaceous: abdomen sometimes piceous, moderately, densely punctulate, and clothed with fine silken cinereous pubescence. Length .14—.18 inch; 3.5—4.5 mm.

The thoracic horn in this species attains greater dimensions than any other in our fauna. In the female it is nearly as broad as long, and its area when viewed from above nearly equal to half the body of the thorax. The male has a narrower horn. The last ventral segment of the male is truncate, and near the margin very feebly triangularly impressed.

The most striking sexual character is observed in the anterior tibiæ of the male, which are provided with a strong triangular tooth at middle on the inner side. There is no described species presenting such a character. The color variations as far as observed are slight, and consist in a narrowing of the middle band, and the extreme tip of the elytra pale.

The type of the markings is similar to *monodon*, but in the present species the band is exactly median.

Occurs in Nevada, Arizona, Texas and Lower California.

N. monodon Fab.—Moderately elongate, testaceous, clothed with coarse pubescence, much of which is erect; elytra with scutellar spots, and a band slightly post-median piceous; head sparsely punctate, front black; surface finely pubescent, and with numerous erect hairs; thorax oval, slightly transverse, shining, rather sparsely punctulate, horn moderate in length, margined, serrate at the sides, crest variable, normally moderately elevated, slightly margined and serrate, sometimes feebly elevated, scarcely margined, the margin indicated by granular elevations; elytra oblong, humeri distinct, apices conjointly rounded in both sexes; surface rather coarsely and moderately densely punctured, clothed with coarse, rather long pubescence, with intermixed semi-erect longer hairs arranged in rows; body beneath rather densely punctulate, finely pubescent. Length .10—.20 inch; 2.5—5 mm.

The sexual differences are very feeble. The last ventral segment of the male is more obtuse at apex, but I can find no trace of the impression usually observed in the other species. The horn is broader in the female, but the difference is so slight that the sexes can hardly be separated in this manner.

The variations in the form of the horn are numerous, and independent of sexual differences; these will be observed in the extent of the margin, the mode and extent of the serration, and the form of the crest. In the larger specimens the crest is well marked, distinctly margined and serrate; in smaller specimens the crest is scarcely elevated, and the margin is

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merely indicated by small tubercles. These forms approach *planicornis*, and might be mistaken for that species. The elytral markings also vary. The usual form is — a small scutellar spot on each side, a transverse band which begins at the side behind the middle, and approaches the suture by curving forward and sending as hort process along the suture. The median band occasionally divides, so that the sutural portion is separated from the lateral portion forming a small detached square spot. Rarely the apices of the elytra are slightly piceous. Specimens rarely occur entirely testaceous.

Occurs everywhere in the United States, also in Lower California.

N. serratus Lec.—Testaceous, sparsely clothed with rather coarse pubescence intermixed with erect hairs; elytra with scutellar and post-humeral spots, and a transverse band at apical third extending along the suture, and often interrupted; head somewhat shining, coarsely punctate, sparsely hairy, front slightly concave; thorax transversely oval, moderately shining, finely punctate, sparsely hairy, horn moderately broad, rather widely margined, coarsely serrate at the sides, crest strongly elevated, margined, scarcely serrate; elytra moderately elongate, humeri distinct, apices variable in the sexes; surface moderately densely punctured, and clothed with rather coarse pubescence intermixed with erect hairs; body beneath somewhat shining, minutely punctulate, and sparsely pubescent. Length .14—.20 inch; 3.5—5 mm.

The males have the last ventral segment truncate and vaguely triangularly impressed. The apices of the elytra of the male are obliquely truncate, the sutural angle obtuse but not rounded, the outer angle obtusely dentiform. The apices in the female are conjointly rounded and rather obtuse. The differences in the horn in the sexes is not very great; in the male the sides are parallel; in the female arcuate, so that the latter are somewhat broader.

The elytral markings are of the *monodon* type with the addition of the post-humeral vitta, the transverse band is, however, more posterior than in that species. The variations in color from this type are in two directions,—an increase of the extent of the piceous markings and a decrease, so that on the one hand the surface may be entirely piceo-testaceous, or entirely pale, without markings.

This species can hardly be mistaken for any other when the male is present. The dark varieties approach similarly dark forms of *anchora*, but the more strongly serrate horn and the elevated crest will readily separate the two.

Occurs from Kansas and Colorado, westward to Oregon and eastern California

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N. anchora Hentz.—Rufo-testaceous, sparsely pubescent, with erect hairs intermixed; elytra with a transverse piceous band behind the middle extending broadly forward along the suture, a lateral piceous spot at the margin; head somewhat darker in color, densely and rather coarsely punctured, sparsely pubescent with erect hairs, front slightly concave; thorax oval, not wider than long, very abruptly widening from the base of the horn; surface slightly shining, rather densely punctate, somewhat rugose, horn rather narrow and long in both sexes, margined and serrate at the sides; crest narrow, very feebly elevated, slightly margined, but distinctly serrate; elytra oblong, moderately shining, rather densely punctured, sparsely clothed with rather coarse pubescence with erect hairs intermixed, apices variable in the sexes; body beneath finely not densely punctured, very sparsely pubescent. Length .14 inch; 3.5 mm.

There is no perceptible difference between the sexes in the width of the thoracic horn, and the last ventral segment is very feebly truncate in the male. The apices of the elytra in the male are obliquely truncate, the sutural angle rounded, the outer angle somewhat more distinct, the female has the apices separately rounded.

The usual elytral ornamentation consists of a transverse, more or less crescentic band on each elytron at the apical third; these join at the suture and extend forward, becoming broader at the base; near the side margin behind the humeri is a vitta of varying size, and sometimes wanting. Specimens rarely occur with nearly the entire surface piceous, with some indistinct testaceous marks on the elytra.

In its normal style of marking this species is easily known.

This species is widely distributed, but has not been observed in Arizona or the Pacific States.

N. denudatus n. sp.—Form slender, parallel, piceous; thorax rufous; elytra indistinctly marked as in *monodon;* surface shining, very sparsely hairy; head piceous, sparsely punctate, front flat; thorax rufo-testaceous, shining, very sparsely but distinctly punctate, very slightly hairy; horn moderately long, narrow, margined at sides and apex, slightly serrate posteriorly; crest scarcely elevated, margined distinctly at the sides, obsoletely in front, not serrate; elytra oblong, parallel, shining, coarsely, rather deeply but not closely punctured, sparsely clothed with rather short pubescence with intermixed short erect hairs in series; body beneath very sparsely punctulate. Length .12—.14 inch; 3—3.5 mm.

The male has the elytra obliquely truncate and sub-spinous at tip, the female conjointly rounded and rather obtuse. The last ventral segment of male is more obtuse, and has a slight fovea near the apex. The thoracic horn shorter, no difference in the two sexes, and is scarcely wider than the crest.

The elytral markings are as nearly as possible those of *monodon*, but the elytra may become almost entirely piceous.

Occurs in California.

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N. conformis Lec.—Testaceous, moderately shining, sparsely clothed with coarse hair with erect hairs intermixed; elytra with scutellar and lateral spots, and band slightly post-median piceous; head very sparsely punctate, front nearly flat; thorax globose, very sparsely punctate and hairy; surface shining, horn narrow, scarcely wider than the crest, rather widely margined at the sides and in front, not serrate, crest abruptly but not much elevated, margined at sides and apex, not serrate; elytra oblong, humeri distinct, apices obliquely truncate and sub-spinous in the male, conjointly rounded and very obtuse in the female, the surface shining, with sparse punctures, which become obsolete toward the apex: body beneath very sparsely punctate and slightly pubescent. Length .12—.14 inch; 3—3.5 mm.

The males in addition to the elytral character have the last ventral segment more obtuse, and with a slight depression The crest of the horn rises more abruptly in the male, and is somewhat higher; the sides of the horn being nearly parallel in the male, but more oval in the female.

The color of the elytra varies greatly. The normal style is that noted above, that is a small post-scutellar spot on each side, an oblong spot behind the humeri, a transverse band behind the middle as in *monodon*. These markings may become suffused, and the color nearly entirely piceous, or they may fade entirely, and the whole surface become uniformly testaceous.

This species is one of a group of three which are troublesome to separate. The thorax is nearly truly globose, and the elytra oblong; in these particulars it differs from *cavicornis*. In *denudatus* the form is still more elongate, and the elytra unusually coarsely punctured.

Occurs in Southern California and Arizona.

N. cavicornis Lec.—Dark testaceous, slightly robust in facies; surface sparsely hairy; elytra with piceous markings as in *conformis*, but more irregular and less distinct; head sparsely punctate, front slightly concave; thorax oval at least one-fourth broader than long (excluding the horn); surface moderately shining, sparsely punctate and hairy, horn narrow, moderately long, feebly margined at the sides, more broadly in front, margin not serrate, crest abruptly elevated, distinctly margined, not serrate; elytra oval, humeri distinct, apices obliquely truncate in the male, conjointly rounded and obtuse in the female; surface moderately punctate, nearly as in *monodon*; body beneath very sparsely punctulate and pubescent. Length .12 inch: 3 mm.

The sexual characters are as in *conformis*, but the female has the crest as strongly elevated as in the male, while the horn itself is scarcely broader.

The elytral markings preserve the type of *conformis*, but the spots are less defined, and the transverse fascia sends processes from the front and hind margins of an indefinite extent. The differences between this species and those more closely resembling it have been referred to.

Occurs near San Francisco, Cal., and Nevada.

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MECYNOTARSUS Laf.

This genus was separated by Laferté from *Notoxus* by the structure of the tarsi. On all the legs the tarsi are slender and much longer than in *Notoxus*, and the penultimate joint is simple.

Three species are now known in our fauna, two from the Atlantic region and one from California. They may be distinguished in the following manner:

Elytra very minutely punctured, the surface clothed with very fine silken pubescence; color pale testaceous.
Thorax oval, narrowed behind, not wider than long; elytra testaceous, with a sutural cloud ..... **delicatulus.**
Thorax transverse, elytra pale testaceous ..... **candidus.**
Elytra coarsely punctured; surface densely clothed with silvery white and brown scale-like hairs, forming a conspicuous design; color black; head, thorax and legs rufo-testaceous ..... **elegans.**

M. delicatulus Horn.—Pale testaceous, elytra with a common sutural piceous clouding; surface clothed with fine silken pubescence; head finely punctured, front flat; thorax oval, somewhat narrowed behind, as long as wide; surface rather densely punctate, horn large and broad, triangular, margined at the sides, suddenly narrowed at base, and rather finely serrulate, the crest narrow, margined incompletely in front, finely serrulate, and with a central carina; elytra oval, the humeri distinct, apices conjointly rounded, the sutural angle slightly obtuse; surface densely punctulate and sub-opaque; body beneath colored as above, finely punctulate and pubescent. Length .10 inch; 2.5 mm.

I have seen but three specimens, all females.

Collected at Fort Yuma, California.

M. candidus Lec.—Pale yellowish testaceous, almost translucent; surface clothed with very fine silken pubescence; head finely and densely punctulate, front flat; thorax oval, broader than long, rather densely and finely punctulate, horn moderate in size, triangular, suddenly narrowed at base, margined and serrulate all around, crest feebly elevated, narrow, feebly margined and serrulate; elytra oval, very finely and densely punctulate; humeri distinct, but obtuse; apices conjointly rounded in both sexes, with the sutural angle obtuse; body beneath as above. Length .08 inch; 2 mm.

The males have the last ventral segment more obtuse, and with a distinct depression at middle.

An extremely delicate species, much paler than *delicatulus*, with finer pubescence and less distinct punctuation.

Occurs at Fortress Monroe and in South Carolina.

M. elegans Lec.—Piceous, nearly black; head, thorax and legs rufo-testaceous; head punctulate with fine silken pubescence, front convex; thorax nearly globose, moderately convex, rather coarsely and moderately densely punctured, densely clothed with brown scale-like hairs on the disc, silvery white at the sides and base, horn moderate, suddenly narrowed at base, margined on each side

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coarsely tridentate, crest narrow and long, reaching nearly the tip of the horn, feebly elevated, distinctly margined, slightly serrulate; elytra oval, humeri distinct, apices conjointly rounded, disc coarsely, deeply and moderately densely punctured, densely clothed with silvery white scales, with brown scales forming a design as follows: a fascia exactly median, the suture from the fascia to the scutellum, an oblique fascia on each side between the middle and apex; body beneath finely punctured and clothed with fine silvery white pubescence. Length .06—.08 inch; 1.5 mm.

The male has the last ventral segment slightly emarginate at tip.

This species is remarkably constant in the form of the thoracic horn and the markings on the elytra, the only variation observed is in the partial obliteration of the oblique fascia.

Collected at Capron, Florida, not rare.

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NOTOXUS Geoff.

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murinipennis Lec. Ann. Lyc. v. p. 170.

N. nuperus n. sp.

N. talpa Laf. Mon. p. 50.
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N. planicornis Laf. Mon. p. 89, pl. 21, fig. 8.

N apicalis Lec. Synopsis, p. 93.
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Synopsis of the PHILONTHI of Boreal America.

By George H. Horn, M. D.

The term Philonthi is here used with the scope given to the genus Philonthus by Erichson. Before that author's time several genera had been suggested which he did not consider valid. Since then the number of species has been so greatly increased that some division seems absolutely necessary. While the subject may be open to discussion whether the divisions are really genera, it is none the less convenient to know them by separate names. The division proposed by Fauvel (Faune Gallo-Rhénane) as far as represented by species in our fauna is as follows:

First joint of hind tarsi as long or longer than the fifth.
Last joint of maxillary palpi slender and acicular.....**Philonthus.**
Last joint of maxillary palpi flattened, oval, elongate, inner side more convex. **Cafius.**
First joint of hind tarsi shorter than the fifth, joints 1–4 decreasing gradually in length.
Last joint of maxillary palpi elongate, conical .....**Actobius.**

In addition to these three Fauvel places two of our species (*baltimorensis* and *apicalis*) in his genus Hesperus, the characters of which are not at all evident as far as our species are concerned.

The material for the present paper has been obtained from my own cabinet, supplemented by that of Dr. LeConte, with additions from Mr. Henry Ulke, of Washington, and a good series from Mr. E. A. Schwarz of the Agricultural Department.

To Mr. A. Fauvel, of Caen, France, I am greatly indebted for the loan of many species from his cabinet bearing manuscript names, enabling me to place his material in relation with our own. I have in the majority of cases adopted his manuscript names, and have made exceptions in those cases only in which I have distributed specimens bearing names of my own suggestion.

A few words regarding the history of this paper may not be inappropriate here. About a year ago Dr. LeConte desired to give a synoptic table of species of Philonthus, as he had already done with several other genera in his "Short Studies." The material was prepared, the sexes of the specimens carefully indicated, and the species separated with a considerable degree of accuracy. Finding the work too great a tax on his eyesight, and as he was unable to use a pen, except with great difficulty, he desired me to complete the paper, so that the labor already expended should not be lost. Although engaged in other studies I yielded

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to his solicitation, and found the work far greater than he anticipated. In fact, beyond the convenient arrangement of the material I was compelled to begin the work entirely anew, and the results of my study are here given, with the hope that something more useful is presented than mere descriptions of new species.

PHILONTHUS Curtis.

In this genus, as at present restricted, the terminal point of the maxillary palpi is slender and acicular, longer than the third joint. The posterior tarsi have the first and fifth joints either equal, or with the first a little longer, the intermediate joints short, and together rarely longer than the first joint.

With Philonthus I have united those species, referred by Fauvel, to Hesperus, as I am unable to see that the metasternum in them differs in any marked degree from very many other species.

After separating Cafius and Actobius, the genus Philonthus remains very largely represented by species in nearly every part of the world; some are cosmopolitan in their distribution. In order ts facilitate the recognition of the species it is necessary to sub-divide the mass by some characters sufficiently constant. After a careful study I have adopted a modification of the method proposed by Erichson, based on the dorsal punctures of the thorax. The change proposed consists in the separation of those species in which the anterior tarsi of the male are slender and not dilated from those with the same tarsi more or less dilated in both sexes. It may be said, in objection to this method, that the female tarsi are more slender than in the male, and consequently with the former sex only at hand there will be difficulty in placing them in the proper series. In our large series I have never observed any such difficulty. When the front tarsi of the male are undilated they are slender, filiform and rather spinous beneath, the females not different. In the other series, however, the tarsi, no matter how narrow the dilatation, are never filiform, and the under side is finely silken pubescent in both sexes.

The dorsal punctures come next in value as a means of further subdivision,—first, those with a regular dorsal series of three, four, or five punctures, and second, those with the punctures very irregularly placed, not in series, and sometimes quite dense.

In the numeration of the punctures the method adopted by Fauvel has been followed, that is, only those punctures are counted which are strictly discal in their position, thus *aeneus* is a tripunctate species, but by the Erichson notation is said to have four punctures. The latter

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author counted in the puncture at the apical margin, which I think Fauvel has clearly shown to belong to the marginal series, and has no part in the discal series proper. This difference of notation must always be borne in mind, as nearly all the species described in our fauna since Erichson's work follow his notation.

The sexual characters of the male, independently of the dilated tarsi, are in nearly all the species very well marked, the terminal ventral segment being always more or less emarginate. The different modifications of the emargination afford excellent and very certain means for separating species which superficially resemble each other very closely.

The following is the scheme of sub-division adopted in the present essay:

Thorax with a distinct and regular series of dorsal punctures.
Anterior tarsi more or less dilated.
Dorsal series of three punctures.....Series **A.**
Dorsal series of four punctures.....Series **B.**
Dorsal series of five punctures.....Series **C.**
Anterior tarsi filiform in both sexes.
Dorsal series regular, but varying in number .....Series **D.**
Thorax irregularly punctured, no distinct dorsal series. Anterior tarsi dilated. Series **E.**

It is well known to those who have studied the genus that there is often an individual variation in the number of the dorsal punctures, usually by an increase, that is, a tripunctate species may become quadripunctate, but I have observed that the adventitious puncture is usually out of line, and in my experience has never occurred on both sides at the same time, so that a species 5-punctate on one side and 4-punctate on the other wil be found to be really a 4-punctate species.

The method of sub-division adopted by Fauvel (Faune Gallo-Rhénane) based on the form of the head, is not applicable to our species, and is probably as illusory for those of Europe.

A

The essential characters of this series are—anterior tarsi dilated, dorsal series of thoracic punctures three.

The anterior tarsi are usuall more widely dilated in the male than in the female, but species have been observed in which the differences in this respect are very slight. The dilatation is usually moderate, rarely broad, and never patellate as in some of the next series. The males have in all the species a well-marked emargination of the last ventral segment, varying somewhat in degree.

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The special characters of the species have been reproduced in the following synoptic table, and seem sufficiently plain to be passed without comment. In the specific descriptions there will be no mention of the usual three dorsal punctures of the thorax. The table is presented as an aid for determination, but it must not be supposed that isolated specimens can be at all times determined from a table, or even from the most labored descriptions.

Species of larger size; thorax as wide as long, not narrowed in front.....2.
Species of smaller size; thorax narrowed in front; elevated line at base of first three dorsal segments straight.....6.

2.—Basal line of dorsal segments in form ⌣—⌣—⌣.....3.
Basal line straight.....4.

3.—Head large in both sexes, abdomen above coarsely punctured, last ventral of ♂ triangularly notched. .....**aeneus.**
Head small, rounded, abdomen above much smoother along the middle, last ventral of ♂ with oval notch.....**atratus.**

4.—Black, or piceous species.....5.
Bicolored species, black, thorax and base of abdomen red.....**laetulus.**

5.—Elytra very black, opaque, surface alutaceous and not deeply punctate. **alutaceus.**
Elytra shining, distinctly punctate.
Elytra closely punctured, surface bright aeneous, thorax with a peculiar golden iridescence .....**sericinus.**
Elytra rather sparsely punctate, without aeneus lustre.
Head large, and transverse in both sexes.
Elytra distinctly shorter than the thorax, thoracic punctures small and indistinct, those of the abdomen small and not numerous. **perversus.**
Elytra not shorter than the thorax, thoracic punctures large and deep, those of the abdomen larger and more numerous.....**bucephalus.**
Head oval, not transverse.
Species large, more robust, surface very black and shining, legs black, abdomen very sparsely punctured.....**nitescens.**
Species large, moderately robust, elytra moderately densely punctured, usually bronzed, abdomen moderately closely coarsely punctate. **furvus.**
Species smaller and slender, elytra bronzed, legs piceous. **umbratilis.**

6.—Elytra sub-muricately punctured.....7.
Elytra with simple punctures.....8.

7.—Elytra bright blue, legs pale yellow.....**gentilis.**
Elytra slightly bronzed, legs dark.
Thorax feebly narrowed in front, dorsum of abdomen moderately closely punctate.....**irinus.**
Thorax very decidedly narrowed in front, dorsum of abdomen very distantly punctured.....**asper.**

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8.—Thorax longer than wide.
Head oval, not conspicuously large.
Elytra piceous with aeneous surface; basal joint of antennæ piceous above, pale beneath..... **politus.**
Elytra reddish, abdomen coarsely very sparsely punctate... **semiruber.**
Elytra piceous to testaceous, abdomen moderately closely punctate; species very small..... **hepaticus.**
Head large in both sexes, elytra brown with paler side margin and apex, abdomen moderately closely punctate ..... **cautus.**
Thorax as wide, or wider than long; thorax and elytra reddish..... **basalis.**

Of the species in the above table *aeneus* is nearly cosmopolitan, *atratus*, *politus* and *umbratilis* occur also in Europe; the others are peculiar to our fauna as far as we know. The species are arranged in the following pages according to their superficial resemblances:

P. aeneus Rossi.—Black. elytra often aeneous, sparsely pubescent; antennæ piceous, not longer than the head and thorax, joints 5–10 broader than long; head often slightly aeneous, broadly quadrate, a few fine punctures at the hind angles; thorax usually broader than long, very little narrowed in front; sides posteriorly distinctly sinuate, dorsal punctures deep; scutellum punctured similarly to the elytra; elytra a little wider than the thorax, conjointly nearly square, black; surface usually aeneous, sparsely punctured, and with brownish pubescence; abdomen above shining, moderately closely rather coarsely punctate, sparsely pubescent, beneath rather less punctured than above; legs black. Length .40—.50 inch; 10—12.5 mm.

Male.—Anterior tarsi moderately dilated, last ventral segment with a small triangular emargination surrounded by a slight gutter.

Female.—Anterior tarsi very slightly dilated, last ventral entire.

This species belongs to a group of larger forms in the present series, the members of which are by no means easy to separate. The form of the basilar stria of the third and fourth dorsal segments seems to be very constant. I have, however, seen one specimen in which the peculiar form is visible on the fourth segment only, and as I have seen but one specimen (*viridicollis* Fv. mss.), and that a female, I feel unwilling to consider it more than a variation. The only other species with similar structure is *atratus*, which is readily separable from *aeneus* by the characters of the table.

P. furvus Nord.—Black, elytra often aeneous, and sometimes paler at the sides, sparsely pubescent; antennæ piceous, nearly as long as the head and thorax, the outer joints nearly as wide as long; head moderately large in both sexes, subquadrate, a few coarse punctures behind the eyes; thorax as broad as long, not narrower in front; sides distinctly sinuate posteriorly, dorsal punctures large and deep; elytra a little wider than the thorax, a little longer than wide conjointly; surface moderately densely punctate, usually bronzed, shining, sparsely pubescent; abdomen shining, coarsely but not closely punctate, sparsely pubescent, beneath coarsely punctate, the apices of the segment smoother; legs black. Length .40—.50 inch; 10—12.5 mm.

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Male.—Anterior tarsi rather widely dilated, last ventral segment triangularly emarginate, with a slight gutter surrounding the emargination.

Female.—Anterior tarsi slightly dilated, last ventral entire.

Two varieties of this species occur, which do not seem limited to any locality:

Furvus Erich.—In this form the sides of the elytra are pale. Occurs from Newfoundland to Vancouver, thence south to Arizona and Mexico.

Californicus Mann.—Elytra black or piceous. This variety does not extend its habitat so far east as the preceding, coming east as far as Lake Superior only. It is the common form in California.

This species and *aeneus* resemble aach other very closely, and are best distinguished by the form of the basal line of the dorsal abdominal segments. In the present species the lines are quite straight without the angular bend at the middle.

Occurs from Newfoundland to Vancouver, and thence southward to Mexico. I have never seen specimens from the eastern United States.

P. sericinus n. sp.—Form rather slender, piceous; elytra very distinctly aeneous; antennæ piceous, as long as the head and thorax, the outer joints nearly as wide as long; head quadrate oval, a very few punctures behind the eyes, somewhat larger in the male; thorax broadly oval, very slightly narrower in front dorsal punctures deep; surface shining, slightly bronzed and with a peculiar lustre along the basal margin and hind angles; elytra very little wider than the thorax, a little longer than wide conjointly, moderately shining, usually very distinctly aeneous, densely punctate sparsely pubescent; abdomen distinctly iridescent, punctures moderately dense along the basal margins of the segments, coarser and sparser at apex, beneath as above; legs piceous. Length .44 inch; 11 mm.

Male.—Anterior tarsi narrowly dilated, last ventral segment with a triangular emargination bordered by a narrow depressed margin.

Female.—Anterior tarsi very narrowly dilated, last ventral entire.

This species might readily be mistaken for a slender form of *aeneus*. It may, however, be known from that species by the more narrowly dilated tarsi of the male, and by the transverse line of the dorsal segments being straight as in *furvus*.

The peculiar lustre at the base of the thorax when viewed in certain lights, is the result of the sculpture of the surface. Under high power the surface will be found obliquely grooved by very fine lines in *aeneus*, and *furvus* the lines are very much finer, and are transverse in place of oblique in the present species.

This species is not very common, although I have seen specimens from Canada, Penna. and Texas.

P. nitescens n. sp.—Form moderately robust, very black and shining; antennæ as long as the head and thorax, black, joints 8–10 as wide as long; head very [illegible] shining, quadrate, not large, a few punctures behind the eyes; thorax

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broader than long, scarcely narrower in front; sides distinctly sinuate posteriorly; surface very smooth and shining, dorsal punctures deep; elytra wider than the thorax, longer than wide conjointly, black, very shining, punctures relatively fine and sparsely placed, pubescence sparse and black; abdomen black, shining, very sparsely punctate and pubescent, basilar line of segments straight, beneath shining, sparsely punctate; legs black. Length .40 inch; 10 mm.

Male.—Anterior tarsi moderately dilated, last ventral with a triangular emargination surrounded by a gutter.

Female.—Anterior tarsi rather slender, last ventral entire.

The only species with which this might be confounded is *furvus*, from which it differs by its very black surface, much less densely punctured elytra and abdomen, and the more narrowly dilated tarsi of the male.

Occurs in Vancouver, Wash. Territory, and also in the south of California; not common.

P. alutaceus n. sp.—Very black, elytra sub-opaque; surface sparsely clothed with black pubescence; antennæ black, a little longer than the head and thorax, the outer joints a little longer than wide; head black with slight aeneous lustre, hind angles numerously punctured; thorax slightly aeneous, a little wider than long, not narrowed in front; sides distinctly sinuate posteriorly, disc convex, dorsal punctures deeply impressed; elytra a little wider than the thorax, conjointly nearly square; surface densely punctate-scabrous, and not shining; abdomen rather closely coarsely punctate on the basal segments, less closely on the apical, beneath equally coarsely but less closely punctate than above; legs black. Length .36—.48 inch; 9—12 mm.

Male.—Anterior tarsi moderately dilated; last ventral segment broadly triangularly emarginate, the emargination surrounded by a gutter.

Female.—Anterior tarsi less dilated than in the male; last ventral segment entire.

This species is closely related to *aeneus*, but its totally black surface, opaque elytra and longer antennæ, mark it as quite a distinct species.

Occurs in the southern regions of California.

P. perversus n. sp.—Form elongate, parallel, piceous moderately shining; legs paler; antennæ barely as long as the head and thorax, brownish, joints 7–10 as wide as long; head rather large, broadly oval, hind angles not punctulate; mandibles long and very slender; thorax not wider than the head, as wide as long, equally broad at apex and base; sides slightly sinuate posteriorly, dorsal punctures deep; elytra not wider than the thorax and not as long, conjointly wider than long, coarsely not densely punctured, sparsely pubescent; abdomen above shining, punctuation sparse and finer than that of the elytra, beneath more numerously punctured than above; legs piceo-testaceous, coxæ darker. Length .46 inch; 11.5 mm.

Male.—Unknown.

Female.—Anterior tarsi not dilated; last ventral entire.

This species, in its form and general appearance, is totally unlike any of the species of the present series except *bucephalus*. It recalls rather some of the species of series D, notably *brevipennis*, than which it is

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very much larger. I place it in the present series because the tarsi are slightly depressed and lack the filiform character of the species of series D. The long and slender mandibles, without trace of the basal tooth, mark it as a peculiar species in whatever group it is placed.

Two specimens, Vancouver.

P. bucephalus n. sp.—Form rather slender and elongate, black, shining, without aeneous lustre; antennæ shorter than the head and thorax, black, joints 5-10 as wide as long; head large and quadrate in both sexes, broader in the male, nearly as large in area as the thorax, very black and shining, a few large punctures only behind the eye; thorax not wider than the head, sub-quadrate; sides sinuate posteriorly; surface black and shining, the dorsal punctures not large nor deep; elytra not wider than the thorax, a little longer than wide conjointly, black shining, punctures rather fine, not closely placed, pubescence sparse, brown; abdomen very sparsely punctate, shining, pubescence sparse, beneath as above, basilar line straight; legs piceous brown. Length .36 inch; 9 mm.

Male.—Anterior tarsi narrowly dilated; last ventral segment with a simple triangular emargination.

Female.—Anterior tarsi scarcely at all dilated; last ventral entire.

Closely allied to the preceding species but smaller and more shining. The elytra and abdomen are more distinctly punctured. The mandibles are equally prominent and slender. The two differ at first sight in the shorter elytra of *perversus*.

The legs are piceous, but sometimes reddish; there is always a marked contrast in color between the legs and coxæ, the latter being always very dark.

Occurs in California and Vancouver; not common.

P. umbratilis Grav.—Black, moderately shining; elytra slightly aeneous; surface sparsely brownish pubescent; legs piceous, or piceo-testaceous; antennæ piceous, a little longer than the head and thorax, joints 5–10 very slightly longer than wide; head orbicular, or slightly quadrate, the hind angles with few small punctures; thorax a little longer than wide, slightly narrowed in front; sides slightly sinuate, disc moderately convex, dorsal punctures deeply impressed; elytra wider than the thorax, conjointly nearly square, moderately closely, not coarsely punctate; abdomen above more finely and much less densely punctured than the elytra, beneath more distinctly and more closely punctured than above. Length .28—.32 inch; 7—8 mm.

Male.—Anterior tarsi rather broadly dilated; last ventral segment triangularly emarginate, the emargination surrounded by a gutter.

Female.—Anterior tarsi very feebly dilated; last ventral entire.

Excepting the characters scheduled in the table there is nothing special to distinguish this species.

Occurs in Europe, and in our eastern Atlantic region, Mass., N. J. and Lake Superior.

P. laetulus Say.—Head, elytra and three apical segments black; thorax and three basal segments red; antennæ black, scarcely as long as the head and thorax,

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joints 5–10 transverse; head orbicular, hind angles nearly smooth; thorax relatively small, narrower than the head even in the female, form nearly square; sides distinctly sinuate when viewed laterally, disc moderately convex, dorsal punctures rather deeply impressed; elytra wider than the thorax, conjointly nearly square, very shining, sparsely punctate, slightly pubescent; surface with slight bluish lustre; abdomen coarsely and sparsely punctured, less closely on the apical segments, beneath equally coarsely punctured, but the punctures are more regularly placed; femora and coxæ red, tibiæ and tarsi piceous, or black. Length .24—.36 inch; 6—9 mm.

Male.—Anterior tarsi moderately dilated; last ventral with a small, broadly triangular emargination; head large.

Female.—Anterior tarsi narrowly dilated; last ventral entire; head not wider than long.

This species, by its Pæderoid style of coloration, can readily be known from all our other species except *blandus*, which, however, has undilated front tarsi, and the legs entirely yellow.

Occurs from Canada to Georgia, and as far west as the Mississippi River.

P. gentilis n. sp.—Black, shining, elytra metallic blue, coxæ, legs, mouth parts and base of antennæ yellow; antennæ a little longer than head and thorax, piceous, three basal joints pale, joints 5–7 a little longer than wide, 8–10 as wide as long, head orbicular, the hind angles nearly smooth; thorax oval, as wide as long, very distinctly narrowed in front; sides not at all sinuate, disc moderately convex, dorsal punctures deeply impressed; scutellum black, moderately densely punctured; elytra wider than the thorax, conjointly a little wider than long, rather densely sub-muricately punctured and sparsely pubescent; abdomen above roughly punctured, the punctures sparser on the apical segments; surface shining, iridescent and sparsely hairy, beneath as coarsely punctured as above, the punctures more closely and regularly placed. Length .34 inch; 8.5 mm.

Male.—Anterior tarsi moderately dilated; last ventral segment broadly triangularly emarginate without gutter.

Female.—Anterior tarsi narrowly dilated; last ventral simple.

In this species the head does not seem to differ in size in the sexes. The beautiful blue color of the elytra has nothing resembling it in our fauna except *cyanipennis*, which differs by its much larger size and simple male tarsi.

Occurs in Arizona.

P. asper n. sp.—Black, moderately shining; elytra distinctly bronzed; legs piceous; antennæ about equal in length to the head and thorax, black, basal joints piceous; joints 4–10 distinctly longer than wide; head oval, distinctly narrowed behind the eyes, hind angles smooth, mouth parts piceous; thorax oval, convex, narrowed in front, not sinuate at the sides, dorsal punctures deeply impressed; elytra not wider than the thorax, conjointly nearly square, densely sub-muricately punctured and sparsely pubescent; abdomen above shining, iridescent, very sparsely, coarsely and rather roughly punctured, beneath shining, iridescent, margins of the segments brownish, very sparsely and coarsely punctured; legs piceous, the coxæ a little darker. Length .34 inch; 8.5 mm.

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Male.—Anterior tarsi moderately dilated; last ventral triangularly incised, the emargination with a surrounding gutter.

Female.—Anterior tarsi narrowly dilated; last ventral entire.

This and the preceding species are peculiar in the present group in the oval and very convex thorax and the roughly sculptured elytra. While closely related in these respects, they differ markedly in the form of the head and the color of the elytra and legs.

I have seen but three specimens,—two females collected in Pennsylvania without more definite statement of locality, and a male from the District of Columbia.

P. politus Fab.—Form moderately robust, black, shining; elytra with distinct aeneous lustre; antennæ as long as the head and thorax, joints all longer than wide, piceous, under side of basal joint pale testaceous; head moderate in size, quadrate oval, smooth, shining, a few large punctures behind the eyes; thorax oval, very little longer than wide, slightly narrowed in front; sides scarcely sinuate posteriorly, dorsal punctures not deeply impressed; elytra wider than the thorax, not longer than wide conjointly; surface densely not coarsely punctate, finely pubescent; abdomen black, shining, somewhat iridescent, moderately densely punctate, the punctures coarser than those of the elytra, sparsely pubescent, beneath as above; legs and coxæ black. Length .36 inch; 9 mm.

Male.—Unknown to me.

Female.—Anterior tarsi slightly dilated; last ventral entire.

This species bears some resemblance to *asper*, but the thorax is less narrowed in front, the elytra more finely and less roughly punctured, the abdomen more densely punctured. The antennal character is unique in the genus, the upper side of the first joint being piceous, or nearly black, the under side very pale.

I have never seen any native specimens, but Mr. Fauvel informs me that he has one from North Carolina and another from "Amer. Bor."

P. irinus n. sp.—Form slender, black, shining; elytra slightly bronzed; legs piceous; antennæ not longer than the head and thorax, black, three basal joints piceous, joints 4–10 broader than long, the outer ones especially transverse; head orbicular, hind angles sparsely punctate; thorax quadrate oval, not at all narrowed in front; sides not sinuate, disc convex, dorsal punctures not deeply impressed; scutellum roughly punctured; elytra very little wider than the thorax, conjointly a little wider than long; surface densely sub-muricately punctured, sparsely pubescent; abdomen black, shining, usually beautifully iridescent, coarsely and moderately densely punctured and sparsely pubescent, beneath black, the margins of the segments brown; surface shining, coarsely and moderately closely punctate. Length .34—.36 inch; 8.5—9 mm.

Male.—Anterior tarsi moderately dilated; last ventral segment rather deeply triangularly emarginate, without gutter.

Female.—Anterior tarsi very narrowly dilated; last ventral entire.

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While closely related to the preceding species, the present one is more elongate; head more quadrate, and the thorax also nearly square, not at all narrowed in front. The antennæ are also stouter and shorter.

Collected by E. A. Schwarz at Columbus, Texas.

P. atratus Grav.—Black, shining, tibiæ and tarsi piceous; antennæ black, as long as the head and thorax, joints 4–10 longer than wide; head quadrate oval, hind angles smooth; thorax oval, a little wider than the head, slightly longer than wide, distinctly narrowed in front; sides slightly sinuate, dorsal punctures moderately impressed; elytra black, with slight æneous tinge, wider than the thorax, conjointly nearly square; surface very sparsely punctate and scarcely pubescent; abdomen above sparsely, coarsely punctate, beneath also very sparsely punctate. Length .28 inch; 7 mm.

Male.—Anterior tarsi moderately dilated; last ventral segment rather deeply triangularly emarginate, the notch surrounded by a well marked gutter.

Female.—Anterior tarsi nearly as widely dilated as in the male; last ventral entire.

This species bears a close resemblance to *sordidus* and *cephalotes* in color, sculpture and size, and might readily be mistaken for the former, especially, except that in the present species the front tarsi are dilated in both sexes.

I have seen but two specimens,—a male without locality, and a female from Hudson's Bay, both in the cabinet of Dr. LeConte.

P. semiruber n. sp.—Form rather slender, color piceous black; elytra, coxæ and legs ferruginous; antennæ brownish, as long as the head and thorax, joints 4–6 a little longer than wide, 7–10 nearly square; head oval, nearly orbicular, hind angles sparsely punctate; thorax a little larger than the head, oval, longer than wide, distinctly narrowed in front; sides slightly sinuate, dorsal punctures rather fine; scutellum black, rather closely punctate; elytra a little wider than the thorax, conjointly nearly square, sparsely rather finely punctate, and with brownish pubescence; surface feebly shining; abdomen shining, sparsely pubescent, punctures much coarser than those of the elytra, but more distant, beneath a little more closely and finely punctate. Length .30—.34 inch; 7.5—8.5 mm.

Male.—Anterior tarsi moderately dilated; last ventral segment with a small triangular emargination surrounded by a distinct gutter.

Female.—Anterior tarsi slightly but distinctly dilated; last ventral entire.

The characters above given will distinguish this species from any in the present group. The following species has also reddish elytra, and will be referred to. Nearly all the species with reddish elytra have five thoracic dorsal punctures.

Occurs in California and Arizona.

P. basalis n. sp.—Form rather robust, thorax and elytra reddish brown, coxæ and legs paler; antennæ scarcely as long as the head and thorax, piceous, the basal joint yellow, joints 4–10 short, as broad as long; head orbicular, hind angles sparsely punctate; thorax oval, a little wider at base than long, wider than the head, very feebly sinuate at the sides, distinctly narrowed in front, dorsal

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punctures moderately impressed, the first and second more distant than the second and third; elytra not wider than the thorax, conjointly a little wider than long, moderately closely, not coarsely punctate, pubescence brownish; abdomen more finely and densely punctured than the elytra, beneath finely and sparsely punctate. Length .24—.30 inch; 6—7.5 mm.

Male.—Unknown.

Female.—Anterior tarsi slightly dilated; last ventral entire.

The three specimens before me have the thorax more or less reddish in color, but varying somewhat, it is therefore possible that specimens may occur with that part black. From the preceding species this differs in having the elytra more densely and the abdomen more densely and finely punctured. The antennæ are also shorter and more robust.

Occurs at Alma, Colorado (altitude 10,000 feet), Swift Current, British America and in Wyoming.

P. cautus Erichs.—Form rather robust, general color brown, head black; elytra paler than the thorax, the side margin and apex testaceous; legs testaceous; antennæ scarcely as long as the head and thorax, piceous, two basal joints pale, joints 4–10 gradually decreasing in length, not longer than wide; head orbicular, variable in size even in the males, relatively large, the hind angles smooth; thorax very little wider than the head, oval, a little longer than wide, distinctly narrowed in front, the sides scarcely perceptibly sinuate, dorsal punctures moderately impressed, equidistant; elytra scarcely wider than the thorax, conjointly a little wider than long, dark brown, the sides widely the apex narrowly paler, moderately densely finely punctate, sparsely pubescent; abdomen a little more coarsely punctured than the elytra, but not quite so densely, beneath more sparsely punctured than above. Length .20—.36 inch; 5—9 mm.

Male.—Anterior tarsi moderately dilated; last ventral segment broadly semicircularly emarginate.

Female.—Anterior tarsi more narrowly dilated; last ventral entire.

The last ventral segment is often testaceous, as described by Erichson, but this is not constant nor sexual. There are so many small brown species in our fauna that it is unnecessary at this time to make extended comparisons. Strict regard must be had to the characters defining the various sub-divisions, and to the sexual characters of the males.

Occurs in the Carolinas, Georgia and Florida.

P. hepaticus Erichs.—Form slender, general color brownish, thorax and elytra paler; legs and base of antennæ testaceous; antennæ as long as head and thorax, piceous, two basal joints testaceous, joints 4–10 gradually shorter, not longer than broad; head black, small, oval, hind angles smooth; thorax oval, distinctly narrowed in front, a little longer than wide; sides nearly straight, a very slight sinuation when viewed laterally, dorsal punctures small and equidistant; elytra wider than the thorax, not longer, than wide conjointly, finely but not densely punctured, sparsely brownish pubescent; abdomen much more finely and densely punctured than the elytra, sparsely pubescent, beneath as finely punctured as above but less densely. Length .18—.22 inch; 4.5—5.5 mm.

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Male.—Anterior tarsi rather broadly dilated; last ventral segment deeply and acutely triangularly incised.

Female.—Anterior tarsi slightly dilated; last ventral entire.

As in all the small brown species the color varies from brownish testaceous to piceous. The head is always black. The elytra often with the sides, apex and suture paler than the disc. The ventral segments have the apical border always paler; even in the darker specimens the legs, including the coxæ, are pale yellowish testaceous.

This species, next to *thermarum*, is the smallest in our fauna with the male tarsi dilated.

Occurs everywhere in our fauna, including California, Nevada and Arizona.

B

The series here aggregated consists of species in which the anterior tarsi of the male are dilated, and the thorax with a dorsal series of four punctures.

As will be seen by the characters used in the following table, the anterior tarsi of the male vary in the degree of dilatation. In a few the tarsi are only moderately dilated, that is to say the male tarsi are not very much broader than in the female. In others the tarsi of the male are twice as wide as in the female, while in a few the anterior tarsi are patellate, forming a disc, as broad as long, composed of the first three joints.

A few species have slender antennæ; in the majority the antennæ are not quite as long as the head and thorax, with the joints 5–10 nearly square.

The sexual characters of the male at the extremity of the abdomen require special attention in the separation or species. In *grandicollis* the penultimate segment is also notched at middle, a very rare character, otherwise known to me only in *alumnus*, a species of the next division. Two species,—*Theveneti* and *quadricollis*, have the last ventral segment longitudinally impressed in addition to the usual emargination. The other characters used in the table do not need further explanation. It is to be regretted that sexual characters have to be used in the table to such an extent, but some of the species absolutely refuse to be separated in any other describable manner.

Anterior tarsi of males very broadly dilated, sometimes patellate.....2.
Anterior tarsi of males moderately dilated, sometimes very little wider than in the female.....3.

2.—Thorax oval, very obviously narrowed in front.
Elytra densely, finely punctured; punctures of thoracic series fine.
gracilicornis.

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Elytra coarsely, not closely punctured: punctures of thoracic series large and deep..... **umbrinus.**

Elytra sparsely punctured, margin and apex testaceous. **flavolimbatus.**

Thorax quadrangular, very little or not narrowed in front.

Elytra clear red, very sparsely punctate..... **palliatus.**

Elytra piceous or black, at least moderately punctate.

Abdomen densely finely punctate, opaque; elytra with brownish or reddish spaces..... **pubes.**

Abdomen rather distantly and coarsely punctured, more shining; elytra totally black with aeneous lustre.

Anterior tarsi of male broadly dilated but not patellate; the last ventral emarginate but not impressed.

Penultimate ventral of male incised at middle..... **grandicollis.**

Penultimate ventral of male entire..... **puberulus.**

Anterior tarsi of male patellate; penultimate ventral very slightly emarginate at middle.

Black species; the last ventral of male emarginate, and rather deeply longitudinally impressed.

Abdomen above unequally punctured, the basal segments very sparsely the apical more densely; thorax narrower than the elytra..... **quadricollis.**

Abdomen above equally sparsely punctured; thorax as wide as the elytra..... **Theveneti.**

Piceous or brownish; last ventral of male not sulcate; legs and basal joints of antennæ pale..... **debilis.**

3. Species of moderate size, antennæ slender, the outer joints longer than wide.

Elytra moderately densely punctured; abdomen very distinctly punctured. **varians.**

Elytra sparsely punctured, slightly aeneous; abdomen very inconspicuously punctured..... **longicornis.**

Species small or minute; antennæ shorter, outer joints quadrate.

Thorax as wide as long; posterior dorsal puncture more distant. **discoidens.**

Thorax longer than wide; punctures deep and equidistant. **thermarum.**

From the remarks on distribution appended to the different species it will be observed that a very large proportion occur in the Eastern Hemisphere, while several seem to be cosmopolitan.

P. gracilicornis n. sp.—Form moderately elongate, black, shining; elytra reddish brown, darker in a broad triangle along the suture, femora and coxæ very pale, tibiæ and tarsi darker; antennæ a little longer than the head and thorax, piceous, basal joint yellow, joints 2–10 very nearly equal in length and very slender; head elongate oval, similar in the sexes, the hind angles smooth; thorax oval, wider than the head, as wide as long, narrowed in front, not sinuate on the sides, dorsal punctures fine, the posterior more distant; elytra a little wider than the thorax, conjointly wider than long, reddish brown, darker in the scutellar region and along the suture; surface feebly shining, moderately densely finely punc-

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tured, sparsely clothed with brownish hair; abdomen punctured very like the elytra but less densely, beneath more shining, a little more finely but less densely punctured than above, coxæ and femora reddish yellow; tibiæ and tarsi black. Length .24 inch; 6 mm.

Male. Anterior tarsi very broadly dilated; last ventral segment deeply triangularly emarginate, the emargination surrounded by a deep wide gutter extending nearly to the base of the segment.

Female.—Anterior tarsi scarcely at all dilated; last ventral segment entire.

This species is known in the present group not only by the characters given in the table, but also by the very slender antennæ.

Occurs in Arizona.

P. umbrinus Grav.—Form moderately elongate, black, shining; legs piceous or testaceous; antennæ shorter than the thorax, black, joints 4–10 gradually shorter and a little wider than long; head orbicular or sub-quadrate, larger in the male, hind angles sparsely punctulate; thorax oval, a little longer than wide, narrowed in front; sides not sinuate, convex, dorsal moderately impressed, the posterior more distant than the others; elytra a very little wider than than the thorax, conjointly nearly square, black or piceous, very shining, moderately coarsely not densely punctured, pubescence sparse, brown; abdomen black, iridescent, punctuation sparse, about equal in coarseness to that of the elytra; legs piceous, or piceo-testaceous. Length .26—.32 inch; 6.5—8 mm.

Male.—Anterior tarsi rather broadly dilated; last ventral with a triangular emargination surrounded by a narrow gutter.

Female.—Anterior tarsi slightly dilated; last ventral entire.

The species which I hade here identified as *umbrinus*, has been known in our collections, and distributed as *boletarius*, a manuscript name imposed by the late Dr. Zimmerman. In general aspect it resembles some of the smaller forms of *aeneus*.

Occurs from New York to South Carolina.

P. flavolimbatus Erichs.—Form slender, black or piceous, side margin and apices of the elytra, legs and base of antennæ testaceous; antennæ brownish, a little shorter than the head and thorax, joints 5–10 nearly square; head black, oval, hind angles smooth; thorax oval, a little longer than wide, narrowed in front; sides slightly sinuate; surface smooth, slightly bronzed, dorsal punctures moderately impressed, the posterior a little more distant; elytra not longer and a little wider than the thorax, conjointly slightly wider than long; surface shining, slightly bronzed, punctuation moderately fine not dense; abdomen much more finely and sparsely punctured than the elytra, beneath piceous, the segments paler at their apices, the punctuation fine, a little more dense than above. Length .14—.22 inch; 3.5—5.5 mm.

Male.—Anterior tarsi very broadly dilated, almost patellate; last ventral segment broadly triangularly emarginate with a broad gutter surrounding the notch; penultimate segment slightly sinuous at the middle of the posterior margin.

Female.—Anterior tarsi narrowly dilated; last ventral entire.

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The extent of the pale marking of the elytral margin is somewhat variable, but it seems not to reach the humeri, and in extending along the apical margin becomes gradually broader internally.

Occurs in the Gulf States and Arizona, extending to South America.

P. palliatus Grav.—Form parallel, black, shining, elytra, legs (except the coxæ) and base of antennæ rufo-testaceous; antennæ piceous, a little shorter than the head and thorax, joints 5–10 nearly square; head orbicular, or nearly quadrate, hind angles distinctly punctulate; thorax quadrate, a little longer than wide, not narrowed in front; sides slightly sinuate, dorsal punctures large, deep and equidistant; elytra scarcely wider and not longer than the thorax, conjointly a little longer than wide, shining, rather distantly and coarsely punctate, pubescence sparse; abdomen coarsely but not closely punctate, beneath more coarsely and closely punctured than above. Length .26 inch; 6.5 mm.

Male.—Anterior tarsi very broadly dilated; last ventral segment broadly triangularly emarginate, with a deep triangular impression extending nearly to the base of the segment; penultemate segment flattened at middle, the posterior margin slightly sinuous.

Female.—Anterior tarsi very narrowly dilated; last ventral entire.

This species is easily known. It is the only one in the present group in our fauna with clear red elytra. The only species at all similar occur in the next group, and have the dorsal series of rather small punctures, with either more closely punctate elytra, or the thorax distinctly narrowed in front.

Occurs in Canada, the Middle States, and as far west as Colorado.

P. pubes n. sp.—Black, legs piceous, front coxæ and femora conspicuously paler; elytra sometimes reddish brown or clouded; antennæ as long as the head and thorax, piceous, two basal joints testaceous, joints 4–10 distinctly longer than wide; head orbicular, hind angles nearly smooth; thorax wider than the head, as broad as long, scarcely perceptibly narrowed in front, convex, very shining, dorsal punctures rather fine, the posterior more distant; elytra scarcely wider than the thorax, conjointly nearly square, not very coarsely but moderately densely punctured, sparsely pubescent; abdomen very densely and very finely punctured, pubescence fine and velvety, beneath punctured as above. Length .20—.22 inch; 5—5.5 mm.

Male.—Anterior tarsi moderately widely dilated; last ventral segment with a triangular emargination surrounded by a distinct gutter.

Female.—Anterior tarsi nearly as widely dilated as the male; last ventral truncate, slightly sinuate at middle.

The color of the elytra may be described as nearly black, with an oblong reddish humeral spot reaching nearly the apical margin, the suture also pale. From this the elytra may become almost entirely red, or very nearly all black. This species may be especially distinguished by its very fine and dense abdominal punctuation.

This species is closely related to *sanguinolentus* Grav., and represents that species in our fauna. It is shorter and more robust, and with the

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elytra scarcely wider than the thorax, and the two basal joints of the antennæ pale, while they are totally black in *sanguinolentus*.

Occurs in Washington Territory and Nevada.

P. grandicollis n. sp.—Form elongate, parallel, black, shining; elytra slightly bronzed; antennæ piceous, nearly as long as the head and thorax, joints 5–10 as wide as long; head sub-quadrate, hind angles distinctly punctured; thorax very little wider than the head, slightly longer than wide; sides nearly straight, very feebly convergent anteriorly, slightly sinuate when viewed laterally, dorsal punctures large, deep and equidistant; elytra very little wider than the thorax, conjointly nearly square, moderately coarsely and rather densely punctured and sparsely pubescent; abdomen as coarsely punctured as the elytra but less densely, the penultimate segment more closely punctured than the others; beneath more closely and rather more densely punctured than above, sparsely pubescent. Length .24 inch; 6 mm.

Male.—Anterior tarsi moderately widely dilated; last ventral segment with a triangular emargination surrounded by a narrow gutter; penultimate segment with a small triangular notch at middle.

Female.—Anterior tarsi slightly dilated; last ventral entire.

For this species I adopt the name under which it was returned to me some years ago by Mr. Fauvel. In a collection kindly loaned me by Mr. E. A. Schwarz the same name is appended to a species formerly labeled *Theveneti* by Fauvel. As the two species have been widely distributed by me under the names as used in the present paper I prefer to retain them.

Occurs in various parts of California, and as far north as Vancouver.

P. puberulus n. sp.—Form elongate, black, shining; elytra slightly bronzed; antennæ nearly as long as the head and thorax, piceous, paler at base, the joints all longer than wide; head sub-quadrate, hind angles distinctly punctured; thorax scarcely wider than the head, longer than wide, very slightly narrowed in front; sides when viewed laterally slightly sinuate, dorsal punctures deep and equidistant; elytra a little wider than the thorax and longer than wide conjointly, very evenly and moderately coarsely punctate, pubescence sparse; abdomen as coarsely punctured as the elytra but less closely, shining, iridescent, sparsely pubescent; beneath less coarsely and more sparsely punctured than above; legs piceous or black. Length .18—.24 inch; 4.5—6 mm.

Male.—Anterior tarsi moderately dilated; last ventral segment broadly triangularly emarginate, the emargination surrounded by a gutter; penultimate ventral vaguely emarginate at middle of posterior margin.

Female.—Anterior tarsi slightly dilated; ventral segment entire.

This species is one of a small series which closely resemble each other superficially, and while they may be distinguished quite readily by comparison, the sexual characters of the male afford the only reliable characters for separation.

Occurs in California and Arizona.

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P. quadricollis n. sp.—Elongate, parallel, black, shining; antennæ piceous, as long as the head and thorax, the joints all a little longer than wide; head orbicular, sparsely punctured behind the eyes; thorax very little wider than the head, nearly square, a little longer than wide, not narrowed in front; sides very slightly arcuate and feebly sinuate when viewed laterally. dorsal punctures moderate, equidistant; elytra a little wider than the thorax, conjointly nearly square, finely not densely punctate; surface slightly bronzed, sparsely pubescent; abdomen above finely punctate, the basal segments very sparsely the apical three more densely; beneath more coarsely but sparsely punctate. Length .20—.28 inch; 5—7 mm.

Male.—Anterior tarsi very broadly dilated, patellate; last ventral segment broadly triangular emarginate. with a moderately deep longitudinal impression extending the entire length of the segment; penultimate segment sinuate at middle.

Female.—Anterior tarsi narrowly dilated; last ventral entire.

In its form and general appearance this species very closely resembles *grandicollis*, and without the male cannot be accurately distinguished. In its sexual characters it resembles *Theveneti*, but the latter has a broader thorax and more coarsely and evenly punctured abdomen.

This species superficially resembles *quisquiliarius* Gyll, of Europe, and has been so named by several authorities. On examining the European species I find the last segment of the male simply emarginate without the longitudinal impression, the posterior margin of the penultimate segment is straight in *quisquiliarius*, and sinuate in *quadricollis*.

Occurs from New York to Missouri and Michigan.

P. Theveneti n. sp.—Form moderately elongate, black, shining; elytra slightly aeneous; legs piceous or black; antennæ piceous, as long nearly as the head and thorax, joints 5–10 nearly square; head sub-quadrate, hind angles slightly punctured; thorax nearly square, not narrowed in front; sides scarcely sinuate, disc convex, dorsal punctures large, deep and equidistant; elytra not wider than the thorax, conjointly a little wider than long, coarsely not densely punctured, sparsely pubescent; abdomen sparsely punctured, the punctures rather finer than those of the elytra; beneath with finer punctures more sparsely placed. Length .20—.26 inch; 5—6.5 mm.

Male.—Anterior tarsi very broadly dilated, patellate; last ventral segment broadly and feebly emarginate and with a slight longitudinal impression extending the length of the segment; penultimate segment sinuate at middle.

Female.—Anterior tarsi narrowly dilated; last ventral entire.

This species bears a manuscript name, under which it is here known, from the hand of Fauvel. It greatly resembles *puberulus* and *grandicollis*, and can only be distinguished with certainty by the male sexual characters.

Occurs in California and Nevada.

P. debilis Grav.—Brownish, piceous to nearly black; legs pale brown, the tibiæ and tarsi darker; antennæ piceous, two basal joints paler, a little shorter

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than the head and thorax, joints 4–10 broader than long; head sub-orbicular, hind angles smooth; thorax wider than the head, not longer than wide, very slightly narrowed in front, feebly sinuate when viewed laterally, dorsal punctures large and deep, equidistant; elytra a little wider than the thorax, conjointly a little wider than long, sparsely not coarsely punctate, rarely with a slight aeneous tinge; abdomen sparsely punctate, the punctures finer than those of the elytra; beneath more coarsely punctate, the margins of the segments paler. Length .20—.25 inch; 5—6.5 mm.

Male.—Anterior tarsi very broadly dilated, patellate; last ventral segment triangularly emarginate, the emargination surrounded by a moderately wide gutter.

Female.—Anterior tarsi narrowly dilated; last ventral entire.

The color of this species is variable. The legs are, however, always pale, and the tibiæ and tarsi usually darker. It differs from the other patellate species in the absence of the longitudinal impression of the last ventral segment. I have seen some darker varieties labeled *insipiens* Fv. in cabinets.

Occurs in Europe and Africa, and in our fauna is found everywhere in the eastern Atlantic region, extending as far west as Kansas and Nebraska.

P. varians Payk.—Black, elytra sometimes brown, legs piceous; antennæ piceous, a little shorter than the head and thorax, joints 4–10 scarcely longer than wide; head orbicular, hind angles sparsely punctured; thorax wider than the head, not longer than wide, very distinctly narrowed in front; sides not sinuate, dorsal punctures moderate, equidistant; elytra a little wider than the thorax, conjointly nearly square, densely punctured, feebly shining, sparsely pubescent; abdomen somewhat iridescent, more coarsely and less densely punctured than the elytra; beneath similarly punctured. Length .20—.26 inch; 5—6.5 mm.

Male.—Anterior tarsi moderately dilated; last ventral segment triangularly emarginate, the emargination surrounded by a gutter, which extends slightly forward on the segment.

Female.—Anterior tarsi slightly dilated; last ventral entire.

The determination of this species is based on specimens returned by Fauvel to Mr. Schwarz so labeled. The form occurring with us is the variety *agilis*. I have suppressed *niger* Mels. as entirely synonymous.

This species is nearly cosmopolitan. In our fauna it occurs in the northern portions of the Atlantic region, extending westward to Washington Territory and California.

P. longicornis Steph.—Black, shining; antennæ piceous, nearly as long as the head and thorax, joints 4–10 a little longer than broad; head oval, hind angles slightly punctate; thorax oval, a little longer than wide, distinctly narrowed in front; sides scarcely sinuate, dorsal punctures moderately deep, the posterior more distant; elytra wider than the thorax, conjointly a little wider than long, moderately densely sub-muricately punctured, sparsely pubescent, sometimes slightly aeneous; abdomen rather finely and densely punctured, especially at the base of the segments; beneath finely densely punctulate, distinctly iridescent. Length .24—.30 inch; 6—7.5 mm.

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Male.—Anterior tarsi moderately dilated; last ventral segment with a broadly triangular emargination surrounded by a gutter extending somewhat forward.

Female.—Anterior tarsi narrowly dilated; last ventral entire.

This species varies with the legs and coxæ brown. It resembles *umbrinus*, but the latter has a larger head and more roughly sculptured elytra and abdomen.

In distribution it is cosmopolitan. From our own fauna I have seen specimens from nearly every region except Arizona.

P. discoideus Grav.—Piceous or brownish, limb of elytra paler, legs and antennæ testaceous; antennæ shorter than the head and thorax, joints 5–10 nearly square; head sub-quadrate ♂ or orbicular ♀, hind angles sparsely punctate; thorax very little longer than the head in the male, sub-quadrate, scarcely narrowed in front, dorsal punctures large and deep, rather closely placed; elytra very little wider than the thorax, nearly square, rather closely not coarsely punctate; surface slightly tinged with æneous, sparsely pubescent; abdomen nearly as coarsely but not as closely punctate as the elytra; beneath a little more coarsely punctured than above. Length .16—.22 inch; 4—5.5 mm.

Male.—Anterior tarsi slightly dilated; last ventral segment broadly but feebly emarginate, surrounded by a slight triangular impression.

Female.—Front tarsi scarcely at all dilated; last ventral entire.

Fauvel and Erichson call the anterior tarsi strongly dilated. From species which have passed through the hands of the former in my cabinet and that of Mr. Schwarz, the anterior tarsi have been found scarcely more dilated in the male than in the females of some of the preceding species.

The coloration is variable, and from my observation the majority of the specimens have elytra uniformly brown without sign of the pale side margin and apex.

In the Eastern Hemisphere the species occurs in all Europe and the Circum-Mediterranean region. In our fauna it occurs everywhere in the Atlantic region extending to Nevada and Arizona.

P. thermarum Aubé.—Form slender, piceous or brownish, legs testaceous; antennæ as long as the head and thorax, piceous, three basal joints paler, joints 4–10 nearly square; head sub-quadrangular, hind angles smooth; thorax not wider than the head, longer than wide; sides parallel, dorsal punctures large, deep and equidistant; elytra wider than the thorax, conjointly nearly square; surface shining, very sparsely and (relatively) coarsely punctate, with very little pubescence; abdomen sparsely punctate, the punctures finer than those of the elytra; beneath more distinctly punctured than above. Length .12 inch; 3 mm.

Male.—Anterior tarsi broadly dilated; last ventral segment emarginate.

Female.—Anterior tarsi slightly dilated; last ventral entire.

This species is the smallest in our fauna.

The distribution is widely extended, and seems to be in the entire Northern Hemisphere. I know of but three specimens, all females, collected in our fauna in Missouri and District of Columbia.

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In addition to the species of the preceding group *P. quisquiliarius* Gyll. is said by Fauvel (Faune Gallo-Rhénane, Staphylinides, p. 464) to occur in California. I have never seen any native specimens.

C

Anterior tarsi of male dilated; dorsal series of thoracic punctures five.

In this series the tarsi of the male are at most widely dilated, never patellate, as observed in some species of B. The anterior tarsi of the females are also dilated, but to a less extent than in the males, and rarely are almost as slender as in the next series. The last ventral segment of the male is always emarginate, sometimes feebly, the emargination often surrounded by a depressed margin or gutter, which may extend in the form of sulcus along the middle of the segment. In *brunneus* the emargination is unusually large for so small a species, and almost semicircular in outline. *P. alumnus* is remarkable in having the penultimate ventral segment of the male notched at middle, a character of very rare occurrence, and known otherwise in *P. grandicollis*, a species of the preceding series.

The principal difficulty in the determination and separation of species is found in the forms most closely allied to *lomatus*, from the fact that the latter is variable in color and sculpture in its very extended distribution.

Males with the last segment alone emarginate.....2.
Males with the last two segments emarginate; species rather small, variable in color, densely punctured.....**alumnus.**
2.—Elytra clear red, sometimes also thorax red.....3.
Elytra dark red or black; antennæ and usually the legs black.....4.
General color piceous, legs and base of antennæ paler.....5.
3.—Thorax entirely or in great part red.
Thorax nearly parallel, very little larger than the head, and distinctly narrower than the elytra.....**innocuus.**
Thorax distinctly narrowed in front, much larger than the head, and as wide as the base of the elytra.....**thoracicus.**
Thorax black.
Thorax very obviously narrowed in front; body fusiform....**fusiformis.**
Thorax scarcely narrowed in front; general form parallel.
Smaller elytra more opaque; antennæ at base and legs pale yellow. **fulvipes.**
Larger more shining; antennæ and legs piceous.....**occidentalis.**
4.—Larger species, the abdomen above very conspicuously and more coarsely punctured than the elytra; legs black; antennæ slender; thorax very obviously narrower in front.
Anterior tarsi ♂ narrowly dilated.

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Form robust, thorax as wide as long.....**Schwarzi.**
Form slender, thorax longer than wide.....**hudsonicus.**
Anterior tarsi ♂ widely dilated.....**Pettiti.**
Smaller species; thorax very little narrowed infront.
Elytra more or less brown or ferruginous.
Abdomen beneath densely finely punctured; anterior coxæ piceous; antennæ slender.....**triangulum.**
Abdomen beneath not densely punctured; anterior coxæ pale; antennæ shorter, the outer joints sub-quadrate.....**ferreipennis.**
Elytra entirely black.
Antennæ slender, the joints all longer than wide.
Abdomen above and beneath densely finely punctured, anterior and middle coxæ testaceous.....**caurinus.**
Abdomen above and beneath coarsely and rather sparsely punctured; coxæ piceous.....**Crotchi.**
Antennæ stouter, the outer joints as wide as long.
Abdomen shining, sparsely and rather coarsely punctate; anterior and middle coxæ pale.....**arizonensis.**

5.—Head oval, distinctly narrowed behind the eyes.
Elytra and abdomen very densely finely punctured and opaque; antennæ short and stout.....**micans.**
Elytra neither densely nor finely punctate, more or less shining.
Antennæ slender and long, basal joint pale, the joints all longer than wide; abdomen not conspicuously coarsely punctured.....**lomatus.**
Antennæ slender, as in *lomatus*, entirely piceous; elytra more coarsely punctate; abdomen more sparsely punctate than *lomatus*.....**cunctans.**
Antennæ shorter, the outer joints not longer than wide; abdomen quite coarsely punctured.....**æqualis.**
Head quadrate in both sexes, not narrowed behind the eyes; abdomen finely punctulate.....**brunneus.**

With the exception of *alumnus* and *fulvipes* the species appear to be native; possibly one or more of those in the black series may be found to have been previously described from Northern Europe.

P. alumnus Erichs.—Form slender, parallel, color variable; antennæ slender, as long as the head and thorax, piceous, basal joints paler, joints all longer than wide: head orbicular, hind angles sparsely punctured: thorax a little wider than the head, slightly longer than wide; sides nearly parallel, dorsal punctures fine and equidistant: elytra a little wider than the thorax, conjointly a little longer than wide, very densely finely punctured, opaque, finely pubescent; abdomen densely punctured, punctures coarser than the elytra; beneath less densely punctured than above, with rather coarser punctures. Length .18—.22 inch; 4.5—5.5 mm.

Male.—Anterior tarsi widely dilated; last ventral segment with a slight emargination surrounded by a wide gutter; penultimate ventral with a triangular notch at middle.

Female.—Anterior tarsi very narrowly dilated: last ventral entire.

This species is very variable in color, and has given rise to several manuscript names. The forms are as follows:

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var. *alumnus* Er.—Black, legs piceous to testaceous.
var. *rufulus* Fv.—Black, elytra red, varying to pale brown; legs testaceous.
var. *atriceps* Fv.—Black, thorax and elytra red; legs pale.

The males are very readily distinguished from any other in the group by the ventral sexual characters. The females, however, resemble *fulvipes*, but are more densely punctured and opaque.

The species was originally described from Porto Rico, but it seems widely spread in our territory. It is known to me from Florida to Arizona, and as far north as New York.

P. innocuus n. sp.—Piceous, thorax and elytra red, legs testaceous; antennæ as long as the head and thorax, rather slender, piceous, two basal joints paler, joints all longer than wide; head broadly oval, hind angles punctured; thorax very little wider than the head, longer than wide; sides nearly parallel, dorsal punctures moderately deep and equidistant; elytra wider than the thorax, conjointly nearly square; surface slightly shining, moderately densely punctured; abdomen moderately densely punctured, the punctures a little coarser than those of the elytra; beneath moderately densely punctured, a little more coarsely than above. Length .18—.20 inch; 4.5—5 mm.

Male.—Anterior tarsi moderately dilated; last ventral with a broad triangular emargination surrounded by a gutter.

Female.—Anterior tarsi narrowly dilated; last ventral entire.

While I have seen but few specimens of this species there seems to be a tendency to variation. The base and sides of the elytra are sometimes piceous as well as a broad space at the base of the thorax. It is probable that varieties will occur totally black.

As the thorax is scarcely perceptibly narrowed in front, the only species with which this is likely to be confused are *alumnus* and *fulvipes* from both of which the male sexual characters must be referred to for separation.

Occurs in Arizona.

P. thoracicus Grav.—Piceous or black, thorax and elytra red, legs testaceous; antennæ slender, longer than the head and thorax, piceous, three basal joints paler, joints all longer than wide; head oval, hind angles sparsely punctate; thorax wider than the head, oval, very obviously narrowed in front, dorsal punctures moderate, equidistant; elytra conjointly broader than long, not longer nor wider than the thorax; surface slightly shining, moderately densely punctured, sparsely pubescent; abdomen less densely but more coarsely punctured than the elytra; beneath more shining, and rather more coarsely punctured than above. Length 32 inch; 8 mm.

Male.—Anterior tarsi moderately dilated: last ventral segment triangularly emarginate, the notch surrounded by a gutter which extends forward on the segment.

Female.—Anterior tarsi quite slender; last ventral entire.

This species although rather long, is quite slender. It is readily known by its coloration, which seems to be constant, and by the large thorax.

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Occurs principally in the Gulf States, but I have seen specimens from Michigan and Kansas.

P. fusiformis Mels.—Body moderately elongate, fusiform, black, shining; elytra red, legs testaceous; antennæ slender, as long as the head and thorax, piceous, two basal joints pale, joints all longer than wide; head rather elongate oval, narrowed behind the eyes and smooth; thorax oval, wider than the head, very obviously narrowed in front, not longer than wide, convex, very shining, dorsal punctures moderately deeply impressed and equidistant; elytra scarcely wider than the thorax, conjointly nearly square, shining, moderately closely punctate, sparsely pubescent; abdomen shining, sparsely coarsely punctate; beneath a little more closely punctate than above. Length .20 inch; 5 mm.

Male.—Anterior tarsi moderately dilated; last ventral triangularly emarginate, surrounded by a triangular impression.

Female.—Anterior tarsi scarcely at all dilated; last ventral entire.

The characters given in brief in the table are the striking points of difference between this species and its close allies.

Occurs in the Middle States and Canada, westward to Colorado.

P. fulvipes Fab.—Form rather parallel, black, shining; elytra red, legs testaceous; antennæ as long as the head and thorax, piceous, three basal joints testaceous, joints 5–10 as wide as long; head oval, scarcely narrowed behind the eyes, hind angles smooth; thorax very little wider than the head, slightly longer than wide, scarcely at all narrowed in front, dorsal punctures moderately impressed, equidistant; elytra a little wider than the thorax, conjointly a little wider than long; surface moderately shining rather sparsely punctate, sparsely pubescent; abdomen sparsely punctate, the punctures rather coarser than those of the elytra; beneath more finely punctured than above. Length .26 inch; 6.5 mm.

Male.—Anterior tarsi moderately dilated; last ventral segment with a feeble triangular emargination surrounded by a triangular impression.

Female.—Anterior tarsi very narrowly dilated; last ventral entire.

In comparing certain specimens sent to me by Fauvel under the name *Horni*, I am unable to find differences warranting specific separation. In some of the native specimens the elytra are possibly a little more closely punctate and less shining.

Occurs in Canada, Mass., Mich. and N. Y. From Kirby's notes (Faun. Bor. Am.) it is impossible to tell whether he had this species or the preceding before him in quoting *fulvipes*, as both occur in Canada.

P. occidentalis n. sp.—Form moderately robust, black, shining; elytra clear red; legs piceous or piceo-testaceous; antennæ longer than the head and thorax, piceous, joints all longer than wide, 8–10 conspicuously shorter than those which precede; head sub-quadrate ♂ or orbicular ♀, hind angles sparsely punctured; thorax broader than the head, as broad as long, very little narrowed in front, dorsal punctures moderate, rather closely approximate, equidistant; elytra a little wider than the thorax, conjointly nearly square, disc rather flat, shining, moderately densely punctate, very sparsely pubescent; abdomen more finely and closely punctured than the elytra; beneath more coarsely punctured than above. Length .28—.30 inch; 7—7.5 mm.

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Male.—Anterior tarsi broadly dilated; last ventral segment broadly triangularly emarginate with a triangular depression.

Female.—Anterior tarsi very feebly dilated; last ventral entire.

Although the legs vary in color from nearly black to testaceous, the anterior coxæ are always conspicuously rufo-testaceous.

This species, by its depressed elytra, is related to the rest.

Occurs in Colorado, Utah, Indian Territory and Wyoming.

P. Schwarzi n. sp.—Body fusiform, very black and shining; antennæ black, a little longer than the head and thorax, joints all longer than wide; head relatively small, orbicular, slightly oval, hind angles punctulate; thorax much wider than the head, oval, narrower in front, not longer than wide, dorsal punctures fine and equidistant; elytra very little wider than the thorax, conjointly a little wider than long, feebly shining, densely and finely sub-muricately punctured, pubescence very short; abdomen iridescent, more coarsely and much less densely punctured than the elytra; beneath similarly punctured. Length .40 inch; 10 mm.

Male.—Anterior tarsi narrowly dilated; last ventral segment with a small triangular emargination surrounded by a distinct gutter.

Female.—Anterior tarsi scarcely at all dilated; last ventral entire.

This species is much the largest of the present series, and is quite conspicuous by its very black surface and iridescent abdomen.

Occurs in Massachusetts and at Detroit.

P. hudsonicus n. sp.—Form slender, elongate, black, moderately shining; antennæ rather slender, a little longer than the head and thorax, joints all longer than wide; head broadly oval, hind angles sparsely punctulate; thorax wider than the head, oval, narrowed in front, a little longer than wide, dorsal punctures fine equidistant; elytra wider than the thorax, conjointly longer than wide, densely, moderately finely punctured, slightly shining, pubescence brownish, sparse; abdomen moderately closely punctate, the punctures coarser than those of the elytra; beneath similarly punctured. Length .26—.30 inch; 6.5—7.5 mm.

Male.—Anterior tarsi narrowly dilated; last ventral segment with a small triangular emargination surrounded by an elongate triangular impression.

Female.—Anterior tarsi nearly as wide as in the male; last ventral entire.

The only species resembling this are *Schwarzi* and *Pettiti*. The former is larger and more robust, the latter somewhat larger, with the thorax shorter and different male characters.

Occurs in Canada and the Hudson's Bay region.

P. Pettiti n. sp.—Moderately elongate, black, shining; antennæ a little longer than the head and thorax, joints all longer than wide; head relatively small, oval, hind angles sparsely punctate; thorax much wider than the head, oval, narrowed in front, not longer than wide, dorsal punctures fine equidistant; elytra a little wider than the thorax, conjointly nearly square, densely, rather finely punctulate, feebly shining, pubescence sparse; abdomen iridescent, coarsely moderately closely punctured; beneath more iridescent, punctures rather finer than above. Length .34—.36 inch; 8.5—9 mm.

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Male.—Anterior tarsi rather broadly dilated; last ventral segment with a small triangular emargination surrounded by a distinct gutter.

Female.—Anterior tarsi slightly dilated; last ventral entire.

The difference between this species and its closer allies have already been referred to.

Occurs in Washington Territory and California.

P. triangulum n. sp.—Black, shining, elytra dark red, the sides and suture (more widely at base) black; legs piceous; antennæ as long as the head and thorax, piceous, joints all longer than wide; head sub-quadrangular, hind angles sparsely punctate; thorax wider than the head, not longer than wide, distinctly narrowed in front, moderately convex, dorsal punctures approximated, equidistant; elytra wider than the thorax, conjointly nearly square, disc depressed; surface shining, not densely punctured, sparsely pubescent; abdomen densely and finely punctured with a velvety aspect, the punctures very much finer than those of the elytra; beneath densely punctured, the punctures a little coarser than above; legs black or piceous, the anterior coxæ piceous. Length .24—.28 inch; 6—7 mm.

Male.—Anterior tarsi rather broadly dilated; last ventral of male broadly triangularly incised with a moderately long triangular impression.

Female.—Anterior tarsi very narrowly dilated: last ventral entire.

The coloration of the numerous specimens before is quite constant. The elytra are dark red, with the sides and suture piceous. The sutural piceous space is usually broader toward the base of the elytra and extends along the base to the humeri. Very rarely the elytra are entirely red, in which case it resembles the preceding species, from which the finely and densely punctured abdomen will distinguish it. In all the collections I have seen a variety of the next species is often intermixed, from a general similarity of coloration. It may, however, be known in whatever color it occurs by the depressed elytra and very finely punctured abdomen.

Occurs in Washington Territory, Nevada and California.

P. ferreipennis n. sp.—Form moderately elongate, piceous, shining; elytra reddish brown; antennæ not longer than the head and thorax, piceous, joints 6–10 as wide as long; head oval, slightly quadrate, a few coarse punctures behind the eyes; thorax wider than the head, oval, nearly as wide as long, very slightly narrowed in front; sides not sinuate, dorsal punctures rather strongly impressed; elytra wider than the thorax, a little wider than long, rather finely and moderately densely punctured, pubescence very fine and black, color usually entirely ferruginous, sometimes with the suture and entire margin piceous; abdomen above shining, iridescent, punctuation coarser but less dense than on the elytra; beneath as above; anterior and middle legs usually testaceous, anterior coxæ testaceous, posterior legs always piceous. Length .24—.28 inch; 6—7 mm.

Male.—Anterior tarsi moderately dilated; last ventral segment broadly triangularly emarginate, with a triangular depression extending forward.

Female.—Anterior tarsi narrowly dilated; last ventral entire.

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By its color this species is readily known from any other except, possibly, *triangulum*, from which it differs by the stouter antennæ and ventral punctuation.

Occurs from Washington Territory to the southern part of California.

P. caurinus n. sp.—Black, shining, legs piceous; antennæ slender, as long as the head and thorax, joints all longer than wide; head quadrate, slightly oblong, hind angles punctured; thorax wider than the head, as wide as long, very distinctly narrowed in front, dorsal punctures rather large, equidistant; elytra a little wider than the thorax, conjointly nearly square, densely rather finely punctulate, sparsely pubescent, feebly shining: abdomen densely and very finely punctulate with velvety aspect; beneath more distinctly punctured than above; legs piceous, or piceo-testaceous, anterior and middle coxæ testaceous. Length .22 inch; 5.5 mm.

Male.—Anterior tarsi moderately dilated; last ventral triangularly emarginate and triangularly impressed.

Female.—Anterior tarsi narrowly dilated; last ventral entire.

This species makes a gradual approach to the brownish species. From these it may be known by the antennæ being at all times piceous, while they have the antennæ testaceous at base.

Occurs from Vancouver to northern California.

P. Crotchi n. sp.—Form rather elongate, black, moderately shining; antennæ piceous, a little longer than the head and thorax, the joints all longer than wide; head orbicular, slightly oval, hind angles sparsely punctured; thorax wider than the head, sub-quadrate, very little narrowed in front, not longer than wide, dorsal punctures rather fine, equidistant; elytra a little wider than the thorax, conjointly a little wider than long, moderately densely and finely punctured, sparsely pubescent, feebly shining; abdomen moderately closely punctured at the sides of the first three segments, sparsely at the middle of these; on the last three segments the punctures coarser than those of the elytra; beneath a little more coarsely punctured than above, the punctures more closely placed along the base and sides of the segments; legs black or piceous, the coxæ piceous. Length .26 inch; 6.5 mm.

Male.—Anterior tarsi moderately dilated; last ventral segment with a broad triangular emargination surrounded by a feebly depressed triangular space.

Female.—Anterior tarsi very narrowly dilated; last ventral entire.

In the general style of its sculpture this species resembles *ferreipennis*; it is, however, much less punctured beneath. The antennæ are slender, as in *triangulum*. The character in the table will distinguish it from *caurinus*.

Occurs from Vancouver to Arizona, more common near Lake Tahoe.

P. arizonensis n. sp.—Form moderately elongate, black, shining; elytra with faint bronze tinge; antennæ piceous, not longer than the head and thorax, joints 7–10 as wide as long; head oval, longer than wide, a few coarse punctures behind the eyes; thorax wider than the head, oval, slightly longer than wide,

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slightly narrowed in front; sides not sinuate, dorsal punctures moderately deeply impressed; elytra a little wider than the thorax, a little wider conjointly than long, rather finely and closely punctate, finely pubescent, slightly bronzed; abdomen shining, sparsely pubescent, rather coarsely punctate, the punctures much sparser on the apical segments; beneath more regularly punctured than above; legs piceous, the anterior coxæ usually, the middle coxæ sometimes pale. Length .24 inch; 6 mm.

Male.—Anterior tarsi moderately dilated; last ventral segment with a triangularly oval emargination and an elongate triangular impression.

Female.—Anterior tarsi rather slender; last ventral entire.

Apart from its color this species resembles *ferreipennis* more closely than any other, and very dark varieties of the latter may be very perplexing. In the present species the thorax is distinctly narrowed in front, and the abdomen more coarsely and sparsely punctate.

P. micans Grav.—Small, moderately elongate, brownish or piceous, legs testaceous; antennæ moderately stout, not longer than the head and thorax, piceous, basal joint testaceous, joints 5–10 as broad or broader than long; head rather broadly oval, hind angles not punctulate; thorax much wider than the head, as broad as long, slightly narrowed in front, dorsal punctures moderate, equidistant; elytra very little wider than the thorax, conjointly nearly square, densely punctured, sub-opaque, finely pubescent; abdomen densely and moderately finely punctured, the punctures coarser than the elytra; surface slightly iridescent, finely pubescent; beneath densely punctured, especially on the basal segments, the punctures coarser than above. Length .18—.20 inch; 4.5—5 mm.

Male.—Anterior tarsi moderately dilated; last ventral broadly triangularly emarginate, the notch surrounded by a distinct depression.

Female.—Anterior tarsi very slightly dilated; last ventral entire.

This species, the smallest of the present series, is a little variable in color. It is never black. The elytra by their opacity often seem paler in color than the rest of the surface, and while the legs are usually testaceous they are rarely piceous.

Occurs in Europe, and the eastern United States from Massachusetts to Michigan.

P. lomatus Erichs.—Form moderately elongate, black, elytra slightly bronzed; antennæ at base and legs testaceous; antennæ long, slender, nearly as long as half the body, piceous, the basal joint paler; head oval, distinctly narrowed behind the eyes, hind angles scarcely punctulate; thorax oval, wider than the head, distinctly longer than wide and narrowed in front, dorsal punctures moderate, equidistant; elytra not wider at base than the thorax, gradually wider behind, conjointly longer than wide, densely punctured, pubescence sparse, brown; abdomen with punctuation not coarser than the elytra but less dense; beneath the margins of the segments paler, not densely punctured, very sparsely pubescent. Length .26—.32 inch; 6.5—8 mm.

Male.—Anterior tarsi rather broadly dilated; last ventral with a triangular emargination and impression.

Female.—Anterior tarsi slender; last ventral entire.

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In the fully developed very dark specimens, the elytra are scarcely bronzed, the legs are always piceo-testaceous with the anterior coxæ pale. When the elytra are pale the bronze surface is more evident, and the sides and apex are often narrowly bordered with paler color, the legs here are entirely pale.

I have before me a small number of specimens in which the abdomen is somewhat more finely and densely punctured. After a careful study of the sexual peculiarities I conclude that these are merely variations from the typical form of *lomatus*. They constitute from our determination *georgianus* Sachse. I have been informed that Fauvel considers the latter species identical with *sobrinus* Er. a conclusion, it seems to me, entirely unwarranted by the description. *P. viperinus* Fv. mss. seems to me merely a small form of *lomatus*.

Occurs everywhere in our fauna except in the Pacific coast region.

P. cunctans n. sp.—Form rather slender, piceous, elytra very distinctly bronzed; legs testaceous; antennæ piceous, slender, a little longer than the head and thorax, joints all longer than wide; head oval, slightly quadrate, a few coarse punctures behind the eyes; thorax wider than the head, oval, longer than wide, scarcely narrowed in front, dorsal punctures moderate; elytra wider than the thorax, conjointly nearly square: surface very distinctly bronzed, and roughly not closely punctured, pubescence sparse; abdomen shining, very sparsely pubescent, punctures rather coarse and not closely placed; beneath shining, coarsely and sparsely punctate, pubescence very sparse. Length .28 inch; 7 mm.

Male.—Anterior tarsi slightly dilated; last ventral segment with a small triangular emargination and a triangular impression extending forward.

Female.—Anterior tarsi very feebly dilated; last ventral entire.

This species might readily be mistaken for *lomatus*, but the antennæ are entirely piceous, and the elytral and abdominal sculpture coarser. The last ventral of the male has a much smaller emargination, and the anterior tarsi less dilated.

Occurs in District of Columbia (Ulke).

P. æqualis n. sp.—Piceous, elytra brownish; legs testaceous; antennæ a little longer than the head and thorax, piceous, two basal joints testaceous; head oval, narrowed behind the eyes; sides nearly straight, hind angles not punctulate; thorax oval, a little wider than the head, a little longer than wide, narrowed in front, dorsal punctures rather deep and closely placed; elytra a little wider than the thorax, conjointly nearly square, punctures moderately coarse but not densely placed, color brownish; surface shining, sparsely pubescent: abdomen piceous, the margins of the segments paler, punctures coarse but not dense; beneath similarly punctured. Length .20 inch; 5 mm.

Mdle.—Anterior tarsi moderately dilated; last ventral with a feeble broad emargination and a narrow longitudinal impression.

Female.—Anterior tarsi feebly dilated; last ventral entire.

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This species resembles some of the smaller forms of *lomatus*, but it has more sparsely punctured elytra, the abdomen more coarsely punctured, antennæ shorter and stouter, and thorax more narrowed in front.

Occurs in Canada, Lake Superior region.

P. brunneus Grav.—Piceous or brownish, rather short; antennæ scarcely as long as the head and thorax, brownish, basal joint pale, joints 4–10 not longer than wide, the outer ones quite transverse; head sub-quadrate in both sexes, not narrowed behind the eyes, the hind angles not punctulate; thorax very little wider than the head, longer than wide, slightly narrowed in front, the sides slightly sinuate, dorsal punctures large and equidistant; elytra very little wider than the thorax, conjointly a little wider than long, moderately densely punctate, shining, sparsely pubescent; abdomen very finely and moderately densely punctulate; beneath more coarsely punctured than above, the punctures coarser, margins of segments above and beneath paler; legs testaceous. Length .20 inch; 5 mm.

Male.—Anterior tarsi moderately dilated; last ventral segment with a large oval emargination.

Female.—Anterior tarsi slightly dilated; last ventral entire.

This species is readily known among the brownish forms by the relatively larger and broader head. The punctuation of the abdomen is also much finer, and resembles that of *caurinus*. The last ventral of the male has a relatively larger emargination than in any species of the series.

Occurs from Canada to Texas, and westward to Nebraska.

D

Anterior tarsi of both sexes filiform, not at all dilated. Dorsal punctures of variable number.

These few words define the series here aggregated. The slender tarsi are perfectly characteristic of and peculiar to this series. It is true that in some species of the preceding groups the tarsi of the females are in some few cases very narrow, but there is withal some dilatation and a decided difference of vestiture. The under side of the front tarsi of the species of the present series is rather spinous, the hairs are short and stiff while in the preceding groups the vestiture is decidedly hairy and silken.

The dorsal punctures of the thorax in their varying number epitomize the three preceding groups, and add another series, which approaches the next group.

The sexual characters are remarkable in two ways. In by far the larger number of species the male characters are much more feebly indicated than in the preceding series; this is remarkable, as we would be inclined to expect that inasmuch as the tarsal sexual characters are ab-

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sent the abdominal characters should be increased. On the other hand several species do present unique and very striking characters in the male, these are *quediinus*, *parvus*, *clunalis* and *bidentatus*.

The series is one of difficult study, especially among the smaller species of the five-punctate group. It is possible to separate the males after a little close study, while the females can only be placed after a careful comparison of the minuter details, which cannot be put intelligibly in words

Dorsal punctures three.

Thorax transversely oval, narrowed in front; elytra bright green or blue. **cyanipennis.**

Thorax oval, as long or longer than wide, not or very little narrowed in front.

Species bicolored.

Blue-black, thorax and base of abdomen reddish yellow..... **blandus.**

Piceous, elytra red, nearly smooth..... **quediinus.**

Species entirely black, elytra often faintly bronzed.

Abdomen distinctly punctate.

Last ventral of male with oval emargination..... **sordidus.**

Last ventral of male with triangular emargination..... **cephalotes.**

Abdomen scarcely punctate; form more slender..... **filicornis.**

Species piceo-testaceous, head black.

Abdomen beneath sparsely punctured..... **inquietus.**

Abdomen beneath densely punctured at base..... **versutus.**

Dorsal punctures four.

Thorax nearly square..... **ventralis.**

Thorax longer than wide, parallel.

Elytra as long or longer than the thorax.

Elytra normally punctured, color piceous or brown..... **distans.**

Elytra nearly smooth at sides and base, color black ..... **fallaciosus.**

Elytra shorter than the thorax..... **brevipennis.**

Dorsal punctures five.

Thorax short, nearly as wide as long.

Species larger, black; elytra regularly punctured..... **Siegwaldi.**

Species small, brown; elytra very sparsely punctured..... **crassulus.**

Thorax oblong, notably longer than wide.

Last ventral of male broadly concave and smooth..... **clunalis.**

Last ventral of male emarginate, and with a channel extending the entire length of the segment..... **parvus.**

Last ventral of male emarginate, without channel.

Last ventral of male acutely triangularly emarginate, each side sinuate, the apex thus bidentate..... **bidentatus.**

Last ventral of male with a large and broad triangular emargination fimbriate on the inner edge with rather long stiff hairs..... **virilis.**

Last ventral of male triangularly emarginate, the entire apex with a semi-membranous border..... **punctatellus.**

Last ventral of male with a broad semi-circular emargination with semi-membranous border..... **microphthalmus.**

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Last ventral extremely feebly emarginate, and with a long triangular smooth space ..... **nigritulus.**

Last ventral of male apparently not emarginate (the emargination is small, triangular and closed by a translucent pseudomembrane). **decipiens.**

Dorsal punctures six, arranged in a sigmoid series.

Antennæ as long as the head and thorax, the joints all as long or longer than wide.

Last ventral of male with a rather large triangular emargination. **albionicus.**

Last ventral of male extremely feebly emarginate..... **instabilis.**

Antennæ shorter than the head and thorax, the outer joints quite transverse. **picicornis.**

P. cyanipennis Fab.—Large, form moderately elongate, black, shining; elytra bright blue; antennæ black, not longer than the head and thorax, joints 7–10 as broad as long; head large, quadrate, broader than long, larger in the male, hind angles sparsely punctate; thorax oval, broader than long, not wider than the head ♂, slightly narrower in front, dorsal punctures three, large; elytra very little wider than the thorax, conjointly broader than long, coarsely, moderately closely punctate, sparsely black pubescent; abdomen iridescent, more coarsely but less closely punctured than the elytra; beneath coarsely and moderately closely punctured on the basal segments. Length .48—.60 inch; 12—15 mm.

Male.—Tarsi all filiform; last ventral broadly triangularly emarginate.

Female.—Tarsi filiform; last ventral entire.

This species is one of the largest in our fauna, and is conspicuous by its bright blue elytra.

Occurs in Europe and the entire eastern United States. I have not seen it from west of Kentucky.

P. blandus Grav.—Black, basal half of abdomen and legs reddish testaceous antennæ piceous, not longer than the head and thorax, joints 5–10 as wide as long; head sub-quadrate, not narrowed behind the eyes, hind angles not punctate; thorax scarcely larger than the head, longer than wide, not narrowed in front; sides distinctly sinuate, dorsal punctures three, equidistant; elytra wider than the thorax, conjointly as long as wide; surface very shining, sparsely punctate and sparsely hairy; abdomen very sparsely punctate, the punctures finer than on the elytra; beneath very sparsely punctate and shining, punctures coarser than above; legs and coxæ rufo-testaceous. Length .20—.22 inch; 5—5.5 mm.

Male.—Tarsi filiform; last ventral truncate, with a triangular impression.

Female.—Tarsi filiform; last ventral entire.

While the thorax is nominally tripunctate, I have seen a specimen symmetrically quadripunctate on each side, the additional puncture being between the first and second of the normal series The last segment of the male abdomen appears to be triangularly emarginate with the notch closed by a transparent membrane.

This species resembles *lætulus* of series A, and is known by the male characters and entirely pale legs.

Occurs from Canada to Virginia and Illinois.

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P. quedilnus n. sp.—Black, elytra red, legs piceous; antennæ as long as the head and thorax, three basal joints piceous, outer joints much paler, joints 5–10 broader than long; head moderately large, sub-quadrate, slightly narrowed behind the eyes, hind angles not punctulate; thorax sub-quadrate, very little wider than the head, not longer than wide, very slightly arcuately narrower to the front, dorsal punctures three, rather small; elytra very little wider than the thorax, conjointly nearly square, shining, almost smooth, the punctures few and distantly placed, scarcely pubescent; abdomen very sparsely punctate; beneath much more coarsely and abundantly punctate. Length .24 inch; 6 mm.

Male.—Tarsi filiform; last ventral feebly but broadly emarginate, penultimate ventral with a small brush of stiff hairs at middle.

Female.—Tarsi filiform; last ventral entire.

This species has many peculiarities which make it very easily known. The elytra are smooth and with probably finer punctures than in any species known to me. The brush of hair on the penultimate ventral of the male is entirely unique in our fauna.

I have seen but two specimens from Detroit and Kansas.

P. sordidus Grav.—Black, elytra slightly aeneous; antennæ piceous, shorter than the head and thorax, joints 5 10 not longer than wide, the outer ones quite transverse; head quadrate, not narrowed behind the eyes, hind angles not punctulate; thorax not wider than the head, a little wider than long, not narrowed in front; sides slightly sinuate, dorsal punctures three, moderately deep and equidistant; elytra a little wider than the thorax, conjointly nearly square, rather coarsely but not densely punctured, the punctures somewhat muricate; surface shining, very sparsely pubescent; abdomen more finely and much more sparsely punctured than the elytra; beneath sparsely punctate. Length .22—.30 inch; 5.5—7.5 mm.

Male.—Anterior tarsi filiform; last ventral with a feeble emargination of oval form, surrounded by a very narrow depression.

Female.—Tarsi filiform; last ventral entire.

In the vast majority of specimens before me the sexes do not differ greatly in the form of the head. Rarely males occur with a very large head, much wider than the thorax. In these latter the sides of the elytra are so suddenly deflexed as to have quite an acute margin extending nearly two-thirds forwards. This character I do not find mentioned.

Occurs in Canada, Michigan, Colorado, Vancouver and California. It is quite common in Europe, extending to Siberia.

P. cephalotes Grav.—Black, elytra slightly bronzed; antennæ piceous, as long as the head and thorax, joints 5–10 sub-quadrate; head quadrate, hind angles not punctulate; thorax not wider than the head, very little longer than wide, not narrowed in front; sides slightly sinuate, dorsal punctures three, equidistant, fine; elytra wider than the thorax, conjointly nearly square, sparsely and not coarsely punctate, shining, very sparsely pubescent; abdomen sparsely punctate, the punctures coarser than those of the elytra; beneath more densely punctate, especially on the basal segments. Length .24—.30 inch; 6—7.5 mm.

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Male.—Anterior tarsi filiform; last ventral with a distinctly triangular notch surrounded by a narrow margin.

Female.—Tarsi slender; last ventral entire.

This and *sordidus* are very closely related, and from my own observation can only be separated by the sexual character of the male abdomen, which is itself very feeble. The differences given by Fauvel and others are extremely slight, and rather illusory in view of the variability of *sordidus* in sculpture.

This species is almost cosmopolitan. I have seen but few specimens from our fauna from Massachusetts and the Middle States.

P. filicornis n. sp.—Form slender, black, elytra distinctly aeneous; antennæ as long as the head and thorax, piceous, joints 5–10 as wide as long: head subquadrate, slightly longer than wide, hind angles not punctulate; thorax very little wider than the head, longer than wide; sides nearly parallel, dorsal punctures three, equidistant, moderately deeply impressed; elytra wider than the thorax, distinctly longer than wide conjointly, sparsely and rather finely punctured, sparsely pubescent; abdomen very sparsely and finely punctured, almost smooth on the three basal segments; beneath very sparsely punctured, the punctures more evident than above. Length .22 inch; 5.5 mm.

Of this species I have seen but one female specimen, which I have no doubt should be referred to the present series by its extremely slender tarsi. The elytral sculpture recalls that of *umbratilis*. In general form it resembles *grandicollis* and *puberulus* of series B. From either of the two preceding species it may be known by its more slender form, less punctate elytra and very much smoother abdomen. I adopt the name under which it was sent by Fauvel to Schwarz, but I can hardly perceive any relevancy in the name.

One specimen, Lake Tahoe, Nevada.

P. inquietus Erichs.—Brownish, rarely piceous, legs and base of antennæ testaceous; antennæ a little shorter than the head and thorax, piceous, two basal joints testaceous, joints 4–10 as wide as long; head orbicular, slightly narrowed behind the eyes, hind angles not punctulate; thorax oval, little wider than the head, slightly longer than wide. somewhat narrowed in front, dorsal punctures three, rather large, the posterior usually more distant; elytra a little wider than the thorax, conjointly nearly square, coarsely and deeply, but not densely punctured; surface shining, very sparsely pubescent; abdomen less coarsely and more sparsely punctured than the elytra; beneath more finely and sparsely punctured than above. Length .20 inch; 5 mm.

Male.—Anterior tarsi filiform; last ventral with an extremely feeble emargination and a slight impression.

Female.—Tarsi filiform; last ventral entire.

This species is by no means easy to separate from *hepaticus*, except when males are at hand, and in the present species the distinctive male characters are so feeble that they may readily escape observation. The head is, however, somewhat larger in the male.

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Occurs from South Carolina to Texas. I have seen one specimen from Canada, which I doubtfully place with this species.

P. versutus n. sp.—Piceous, thorax and elytra brownish testaceous; legs paler; antennæ a little shorter than the head and thorax, brownish, two basal joints paler, joints 4–10 not longer than wide, the outer ones quite transverse; head black, sub-quadrate, not narrowed behind the eyes, hind angles not punctulate; thorax not wider nor longer than the head, sub-quadrate, as wide as long, not narrowed in front, dorsal punctures three, moderate in size, equidistant; elytra a little wider and longer than the thorax, longer than wide conjointly, punctures moderate in size, closely but not densely placed; surface moderately shining, sparsely pubescent; abdomen a little more finely and sparsely punctured than the elytra; beneath more closely punctured than above, the basal segments especially densely. Length .22 inch; 5.5 mm.

Male.—Anterior tarsi filiform; last ventral segment truncate, with a scarcely perceptible emargination.

Female.—Tarsi filiform; last ventral entire.

This species is very closely relied to the preceding. At first sight *inquietus* is rather depressed, *versutus* more cylindrical. The former has a sparsely punctured abdomen, the latter densely at base beneath. On actual comparison the form of the last ventral of the male differs in the two species, but in a manner almost impossible to describe.

The elytra are usually uniform in color, brownish testaceous; some specimens, however, are clouded, leaving the suture and side margin of that color.

Occurs in California.

P. ventralis Grav.—Form moderately elongate, piceous or brownish; elytra slightly bronzed; antennæ as long as the head and thorax, piceous, two basal joints pale, joints 4–10 as wide as long; head oval, slightly narrowed behind the eyes, hind angles not punctulate; thorax a little wider than the head, sub-quadrate, not narrowed in front, dorsal punctures four, large and deep, the first three closely placed, the fourth more distant; elytra a little wider than the thorax, convex, conjointly nearly square, rather coarsely and moderately closely punctate, sparsely pubescent; abdomen sparsely punctured, the punctures finer than those of the elytra; beneath more coarsely punctured than above. Length .20 inch; 5 mm.

Male.—Tarsi filiform; last ventral with an extremely feeble emargination, and a very slight triangular impression.

Female.—Tarsi filiform; last ventral entire.

This species is easily known by its rather square quadripunctate thorax. It is difficult to separate the females from some of the smaller species of series B.

Occurs in Europe, extending to Siberia and Africa. In our fauna it occurs in Michigan, Missouri and Nevada.

P. distans n. sp.—Black, piceous or brown; elytra slightly bronzed; legs testaceous; antennæ entirely piceous, as long as the head and thorax, joints 5–10 as broad as long; head oval; sides nearly straight, hind angles not punctulate;

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thorax a little wider than the head, longer than wide; sides nearly parallel, dorsal punctures four, moderately impressed, the anterior always more distant; elytra wider than the thorax and slightly longer, a little longer than wide conjointly, punctures moderately coarse, not closely placed; surface shining, with very little pubescence; abdomen sparsely punctured, the punctures finer than those of the elytra; beneath more shining, similarly punctured. Length .20 inch; 5 mm.

Male.—Tarsi filiform; last ventral with a very slight emargination, and a longitudinal impression, the entire apex with a rather wide membranous border.

Female.—Tarsi filiform; last ventral entire.

This species has the form and appearance of *nigritulus*, but may be known by the dorsal punctures and large thorax.

Occurs in Vancouver and Nevada.

P. fallaciosus n. sp.—Shape somewhat fusiform, black, shining; legs and coxæ rufo-testaceous; antennæ brown, paler at base, nearly as long as the head and thorax, joints 4–10 not longer than wide, gradually broader; head quadrate oval, black, shining, a very few punctures behind the eyes; thorax oval, a little longer than wide, not narrowed in front; sides not sinuate, dorsal punctures four, moderately impressed: elytra a little longer and wider than the thorax, wider at apex, a little broader than long, moderately convex, punctuation sparse, nearly obsolete along the base and side margin, pubescence very sparse; abdomen moderately shining, punctuation sparse, finer than on the elytra, pubescence very sparse; beneath a little more coarsely punctured than above. Length .16 inch; 4 mm.

Male.—Anterior tarsi slender; last ventral segment with large triangular emargination.

Female.—Tarsi slender; last ventral entire.

A much smaller and blacker species than the others of the quadripunctate series, differing especially in the male sexual characters and the punctuation of the elytra.

Two specimens, Massachusetts and Pennsylvania.

P. brevipennis n. sp.—Form moderately elongate, gradually broader behind, piceous to brown; legs testaceous; antennæ brownish, scarcely as long as the head and thorax, joints 5–10 as wide as long; head oval; sides parallel, sparsely punctulate behind the eyes; thorax very little wider than the head, about one-fourth longer than wide; sides parallel, dorsal punctures normally four, rather deeply impressed, equidistant; elytra wider than the thorax and shorter, wider behind, wider conjointly than long, rather coarsely and moderately closely punctate, very sparsely pubescent, shining; abdomen very sparsely punctate, punctures finer than those of the elytra, sparsely pubescent; beneath a little more closely punctured than above. Length .18—.20 inch; 4.5 mm.

Male.—Tarsi filiform; last ventral with a feeble emargination surrounded by a triangular impression.

Female.—Tarsi filiform; last ventral entire.

This species is conspicuous by its short elytra, it otherwise resembles some of the brownish forms of *nigritulus*. While the normal number of dorsal punctures is four I find considerable variation in the small

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number of specimens before me, one having but three dorsal punctures on one side while another has five.

All the specimens observed are from the north shore of Lake Superior.

P. Siegwaldi Mann.—Black, lege piceous; elytra slightly bronzed; antennæ piceous, nearly as long as the head and thorax, joints 7–10 as wide as long; head orbicular, a little larger in the male, hind angles not punctulate; thorax not wider than the head of the male and scarcely larger, sub-quadrate, not narrowed in front, dorsal punctures five, moderately deep, rather closely placed; elytra a little wider than the thorax, longer than wide conjointly, coarsely and rather closely punctured, sparsely pubescent; abdomen very sparsely punctured and shining, the punctures very much finer than on the elytra; beneath nearly smooth, the punctures sparse and very distant. Length .26—.30 inch; 6.5—7.5 mm.

Male.—Tarsi filiform; last ventral with a feeble oval emargination surrounded by a narrow depression.

Female.—Tarsi filiform; last ventral entire.

This species resembles in form and general appearance *sordidus* and *cephalotes*, the elytra are, however, more densely and the abdomen more sparsely punctured than either.

Occurs from Alaska southward as far as northern California.

P. crassulus n. sp.—Facies rather robust, general color brownish, shining; head black; antennæ brown, rather stout, not as long as the head and thorax, joints 4–10 not wider than long and gradually broader; head quadrate oval, black, shining, a few coarse punctures behind the eyes; thorax oval, not narrowed in front, nearly as wide as long; surface shining, dorsal punctures five, moderately impressed; elytra a little wider than the thorax; sides slightly arcuate, a little broader conjointly at apex than long, convex, shining, punctures relatively coarse but irregular in size, sparsely placed, apparently without pubescence; abdomen darker than the elytra, the apices of the segments paler; surface shining, very sparsely pubescent, punctuation finer than the elytra and sparse; beneath as above; legs pale brown. Length .16 inch; 4 mm.

Male.—Anterior tarsi slender; last ventral segment with an oval emargination, the border of which is membranous.

Female.—Unknown.

A small species of peculiar facies from the rather robust form, very shining surface and convex elytra.

I have seen but one specimen kindly loaned me by Mr. Fauvel, collected in Nevada.

P. clunalis n. sp.—Piceous, nearly black; legs pale testaceous; antennæ nearly as long as the head and thorax, piceous, joints 6–10 as wide as long; head oval; sides parallel, hind angles not punctulate; thorax a little wider than the head and longer than wide; sides straight, slightly narrowed in front, dorsal punctures five, not large, equidistant; elytra a little wider but not longer than the thorax, conjointly less wide than long, moderately coarsely punctate, very sparsely pubescent; abdomen more finely and sparsely punctured than the elytra; beneath more coarsely punctured than above. Length .22 inch; 5.5 mm.

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Male.—Anterior tarsi filiform; last ventral strongly bidentate at apex, the teeth slightly everted, the margin of the segment each side deeply sinuate, the face of the segment concave, smooth, shining; anal processes stout and bent downwards.

Female.—Anterior tarsi filiform; last ventral segment prolonged in a lobe at the middle, and on each side sinuate.

This species has somewhat the facies of *puberulus*, but is readily known in either sex by the peculiar sexual characters. I have seen a specimen from Fauvel with eight dorsal punctures, with unmistakable male characters.

Occurs in California, probably in the southern portion.

P. parvus n. sp.—Piceous or brownish, legs testaceous; antennæ nearly as long as the head and thorax, piceous, two basal joints pale, joints 6–10 as wide as long; head oval, the sides parallel, hind angles not punctulate; thorax not wider than the head, oblong, longer than wide; sides nearly parallel, dorsal punctures five, moderately deeply impressed, equidistant; elytra a little wider than the thorax and as long, conjointly a little longer than wide, moderately closely but not coarsely punctate; surface shining, very slightly bronzed, sparsely pubescent; abdomen sparsely punctate, punctures finer than on the elytra; surface slightly iridescent; beneath very sparsely punctate. Length .18 inch; 4.5 mm.

Male.—Anterior tarsi filiform; last ventral segment not emarginate at middle, but distinctly sinuate on each side, with a rather deep longitudinal sulcus extending the length of the segment.

Female.—Tarsi slender; last ventral entire.

This is one of the smallest species of the genus, and resembles *nigritulus*. The sexual characters of the male, which are unique in our fauna, afford the only reliable means for distinguishing it from the many small piceous species.

Occurs in Arizona.

P. bidentatus n. sp.—Piceous, thorax and elytra reddish brown; legs testaceous; antennæ nearly as long as the head and thorax, piceous, two basal joints pale, joints 6–10 nearly square; head oval, slightly narrowed behind the eyes, hind angles punctulate; thorax a little wider than the head, longer than wide, slightly narrowed in front, dorsal punctures five, equidistant; elytra a little wider and longer than the thorax, longer than wide conjointly, punctures coarse, sparsely placed, pubescence sparse; abdomen very sparsely and finely punctured; beneath a little more distinctly punctured than above. Length .22—.24 inch; 5.5—6 mm.

Male.—Anterior tarsi filiform; last ventral segment with two membranous tooth-like processes, separated by an acutely triangular notch, in front of which the corneous portion of the segment seems triangularly emarginate and on each side sinuate.

Female.—Unknown.

The general appearance of this species is that of *ventralis*, with, however, a longer thorax. The sexual characters are very remarkable, and afford the only reliable means of separating the present species from the series following it.

Occurs in California, Vancouver and Washington Territory.

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In the collection of Mr. Schwarz there is a female specimen of a species very closely allied to the preceding but differing in its paler and somewhat more robust antennæ, and a head a little more broadly oval. It is labeled *Schwarzi* Fauvel. I do not feel at liberty with such insufficient material to give it a name, as I have used the same designation for a more imposing species.

P. virilis n. sp.—Form of *nigritulus*, somewhat more robust, rufo-piceous, shining; legs testaceous, the middle and posterior tibiæ somewhat darker; antennæ as long as the head and thorax, brown, joints 5–10 gradually shorter and broader; head oval, darker, a few coarse punctures at the sides; thorax a little wider than the head, longer than wide, not narrowed in front; sides scarcely sinuate, dorsal punctures five, not large; elytra a little wider than the thorax, slightly wider behind, not longer than wide conjointly; surface shining, coarsely and sparsely punctured, scarcely at all pubescent; abdomen darker than the elytra, punctuation finer but very sparse, pubescence very sparse; beneath as above. Length .18 inch; 4.5 mm.

Male.—Tarsi slender; last ventral with a large and broad triangular emargination fimbriate within with rather long stiff hairs.

Female.—Tarsi slender; last ventral entire.

In its general appearance this species does not differ notably from many of the forms of *microphthalmus*, *nigritulus* or *crassulus*. The sexual characters of the male mark it as very distinct. The emargination of the last ventral in that sex is greater proportionately than in any other species known to me, and occupies at least one-third of the superfices of the segment.

Two specimens, Vancouver.

P. punctatellus n. sp.—Form slender, elongate, piceous, moderately shining; legs testaceous: antennæ piceous, shorter than the head and thorax, joints 5–10 not longer than wide, the outer ones broader than long; head oval, slightly oblong, hind angles not punctulate; thorax very little wider than the head, longer than wide, slightly narrower in front, dorsal punctures five, equidistant, and rather deeply impressed; elytra wider than the thorax, slightly broader behind, longer than wide conjointly; surface rather shining, very sparsely pubescent, punctures coarse, regularly but not closely placed; abdomen above with sparser and less coarse punctures than the elytra; beneath sparsely punctate. Length .24 inch; 6 mm.

Male.—Anterior tarsi slender, filiform; last ventral segment with a broad pellucid border, and with a triangular notch in the border and in the corneous portion of the segment also.

Female.—Tarsi filiform; last ventral entire.

This species resembles some of the larger forms of *nigritulus*, but the elytra are more coarsely punctured. In the latter respect it resembles *bidentatus*. The sexual characters of the male are the only positive means for distinguishing the species.

Occurs in the Hudson's Bay region, and at Lake Tahoe.

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P. microphthalmus n. sp.—Piceous, brownish, or nearly black; legs testaceous, with the tibiæ and tarsi piceous; antennæ shorter than the head and thorax, rather stout, joints 5–10 not longer than wide, the outer ones quite transverse; head oval; sides nearly parallel, sparsely punctulate behind the eyes; thorax longer than wide, scarcely wider than the head; sides nearly parallel dorsal punctures five, small, equidistant; elytra a little wider than the thorax and as long, slightly broader behind, as broad conjointly as long, not densely but moderately coarsely punctate, sparsely pubescent; abdomen more finely and sparsely punctulate than the elytra; beneath more closely punctured than above. Length .14—.18 inch; 3.5—4.5 mm.

Male.—Anterior tarsi filiform; last ventral with a broadly oval, almost semicircular emargination bordered within with a pellucid margin.

Female.—Tarsi filiform; last ventral entire.

This species is very variable, and it is consequently difficult to fix with certainty its limits. It is, of course, absolutely necessary to have the male, when the sexual characters will distinguish it from any of the preceding without difficulty.

For a long time this species has been considered by us as *nigritulus*, to which it has great resemblance; in fact the females can hardly be separated; superficially the characters are as variable here as indicated by Fauvel, for *nigritulus* (Faune Gallo-Rhénane iii, p. 470).

Occurs from Vancouver eastward to the New England States, and as far south as Virginia.

P. nigritulus Grav.—Black, shining, elytra often slightly bronzed; legs piceous or testaceous; antennæ as long as the head and thorax, piceous, joints 7–10 not longer than wide; head oval; sides parallel, hind angles sparsely punctulate; thorax not wider than the head, longer than wide; sides parallel, dorsal punctures five, equidistant; elytra a little wider than the thorax and a little longer, longer than wide conjointly, sparsely rather finely punctate, sparsely pubescent; abdomen sparsely and a little more finely punctured than the elytra; beneath more distinctly punctured than above. Length .18—.20 inch; 4.5—5 mm.

Male.—Anterior tarsi slender; last ventral segment with an extremely slight emargination and a very feeble, smooth, triangular impression.

Female.—Tarsi slender; last ventral entire.

There need be no difficulty in distinguishing the males of this specie from any except *microphthalmus;* in both the characters are very feeble, but in the present species the notch is so very slight that it might readily escape observation. On comparing the two otherwise the antennæ will here be found longer and fewer of the joints as wide as long, the elytra are more finely punctured, usually more depressed, and the entire color blacker, the legs long, very rarely pale.

Occurs from Vancouver to Arizona, Lake Superior and the New England States.

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From the description given by Maeklin of *picipennis*, it is difficult to say whether he had before him some of the forms of *nigritulus* or *microphthalmus*. From the fact that he describes the legs as testaceous, I am inclined to accept the idea of Fauvel that it is *nigritulus*.

In studying a series of *nigritulus* sent me by Fauvel, and observing the extent and manner of variation, I am inclined to consider the forms distributed under the name *anthracinus* to be merely a variety. These are usually darker in color and rarely the punctuation is finer than normal, but in whatever variation of form, size or color the sexual characters remain the same.

In both *microphthalmus* and *nigritulus* there is some variation in the form of the head, which is at times quite oblong, and as often quadrate oval, this entirely independently of the sex.

There is no more difficult series in the genus than the little group with simple male tarsi and quinquepunctate thorax.

P. decipiens n. sp.—Very closely related to *nigritulus*, and differing as follows: color reddish brown, abdomen darker; elytra more distinctly punctured; legs and coxæ rufo-testaceous. Length .20 inch; 5 mm.

Male.—Anterior tarsi slender; last ventral segment not emarginate; when viewed by transmitted light the last ventral is apparently acutely triangularly emarginate, the notch being entirely closed and the apex entire, by a translucent border.

I have seen but one specimen of this species kindly loaned me by Mr. Fauvel, from which it is impossible to say if the color in constant. It is very probable that the legs are always pale.

Occurs in California.

P. albionicus Mann.—Form moderately elongate, black, shining, very sparsely pubescent; antennæ piceous, as long as the head and thorax, joints all as long or longer than wide; head quadrate oval, shining, a few large punctures near the hind angles; thorax not wider than the head, longer than wide, not wider behind; sides feebly sinuate, dorsal punctures six, rather deeply impressed, arranged in a sigmoid series; elytra wider and longer than the thorax, a little longer than wide conjointly, black, shining, pubescence very sparse, punctuation rather coarse and deep, not closely placed; abdomen shining, iridescent, pubescence very sparse, punctuation finer than on the elytra, and rather more sparse; beneath the punctuation is rather coarser and closer; legs piceous, or piceo-testaceous. Length .24 inch; 6 mm.

Male.—Anterior tarsi slender; last ventral segment with a rather large triangularly oval emargination with a distinctly depressed border.

Female.—Unknown.

This species closely resembles *instabilis*, but the thorax is not narrowed in front, and the elytra more coarsely punctured. The male sexual characters are the most reliable for the separation of the species.

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The identity of the species has been determined from description alone, and from a specimen sent me by Mr. Fauvel I find that he has made at a similar determination.

Alaska, Washington Territory, Vancouver and one from Arizona.

P. instabilis n. sp.—Black, legs piceous, elytra slightly bronzed; antennæ as long as the head and thorax, piceous, joints all as long or longer than wide; head oval, slightly narrowed behind the eyes, hind angles sparsely punctulate; thorax a little wider than the head, nearly as broad as long, slightly narrowed in front, dorsal punctures six, sometimes placed in groups of three; elytra a little wider and longer than the thorax, longer than wide conjointly, rather densely punctate, sparsely pubescent; abdomen much more finely and sparsely punctured than the elytra; beneath more distinctly punctured than above. Length .24 inch; 6 mm.

Male.—Anterior tarsi filiform; last ventral segment with a very feeble, broad emargination, and a slight trace of a triangular impression.

Female.—Tarsi filiform; last ventral entire.

This species resembles in general appearance *filicornis*, already described. The dorsal punctures of the thorax, as stated above, are sometimes placed in groups of three in the two series, usually, however, the series is continuous, and the punctures arranged in a slightly sigmoid curve.

Occurs in Colorado and Wyoming.

P. piceicornis n. sp.—Piceous or brownish, legs testaceous; antennæ brownish, shorter than the head and thorax, rather robust, joints 4–10 not longer than wide, the outer ones quite transverse; head sub-quadrate, sparsely punctured behind the eyes; thorax scarcely wider than the head, longer than wide, not narrowed in front, dorsal punctures six, arranged in a slightly sigmoid curve; elytra a little wider and about as long as the thorax, conjointly nearly square, moderately closely punctate, sparsely pubescent; abdomen more finely punctured than the elytra and very sparsely; beneath sparsely punctate, feebly shining. Length .18—.22 inch; 4.5—5.5 mm.

Male.—Anterior tarsi filiform; last ventral segment with a very feeble trace of emargination, but with a well marked, rather deep, small triangular impression.

Female.—Tarsi filiform; last ventral entire.

A very inconspicuous species with nothing remarkable in its structure. As a member of the series with simple tarsi, it can be associated with *albionicus* alone from the number of dorsal punctures. It differs from that species by the very much shorter and stouter antennæ and the male ventral characters.

Occurs at Lake Tahoe, Nevada.

It is barely possible that the specimen referred to in a preceding description as *Schwarzi* Fv. may belong here. The dorsal punctures of the specimen before me are rather irregular in both series, and disagree in their number. If it is really a six-punctate species, as one side indicates, I have no hesitation in placing it here from its other characters.

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Dorsal series of punctures extremely irregular or confused, or the thorax numerously or even densely punctured.

The species of this group are of at least moderate size. They all have the front tarsi dilated, more widely in the males. The last ventral segment of the male is always emarginate, and in one species (*Lecontei*) the penultimate also to a slight degree.

Some of the species have the head punctured beneath, a character not observed outside of the present series. Several species exhibit decided traces of the infra-orbital ridge to which I have already called attention in the Tachyporini, it is best marked in *Lecontei* and *aurulentus*, and fades out so gradually in the other species that no use can be made of it in the tables.

The species are arranged with *serpentinus* at the head, as this seems more closely related to the mass of preceding species.

Two of the species of the present series (*baltimorensis* and *apicalis*) are placed by Fauvel in the genus Hesperus. If this reference be correct, then that genus seems not to rest on any tenable basis.

All the species of this group seem peculiar to our fauna.

Thorax either parallel or narrowed behind, longer than wide.....2.
Thorax oval, distinctly narrowed in front, as wide as long.....5.
2.—Thorax with very few punctures, head oval, narrowed behind the eyes, nearly smooth .....**serpentinus.**
Thorax numerously or even densely punctured; head transverse or quadrate, not narrowed behind.....3.
3.—Thorax with numerous coarse punctures .....4.
Thorax densely punctured, except at middle.....6.
4.—Head transverse, wider than long.
Antennæ moniliform; elytra red; abdomen brown.....**baltimorensis.**
Antennæ of normal form, tip of abdomen rufescent.....**apicalis.**
Head quadrangular.
Legs piceous: head smooth beneath .....**quadrulus.**
Legs pale testaceous: head punctured beneath.....**viridanus.**
5.—Thorax very densely punctured, a narrow smooth space only; legs pale testaceous.....**confertus.**
Thorax coarsely sparsely punctured; legs piceous.
Last ventral of male deeply triangularly emarginate, the penultimate slightly emarginate; anterior tarsi patellate.....**Lecontei.**
Last ventral of male feebly emarginate, penultimate entire; anterior tarsi broadly dilated.....**aurulentus.**
6.—Species very small and narrow .....**piger.**

P. serpentinus n. sp.—Slender elongate, reddish brown; elytra paler head and thorax black; legs rufo-testaceous; antennæ nearly as long as the head and thorax, piceous, the last two joints yellow, joints 7–10 as wide as long; head

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broadly oval, distinctly narrowed behind; surface not more punctate than in the preceding series; beneath smooth; thorax not wider than the head, longer than wide; sides slightly arcuate, not narrowed in front, dorsal punctures very fine and small, very irregularly placed; elytra wider than the thorax, conjointly square, shining, rather coarsely and roughly punctate, the punctures sparsely placed, pubescence sparse; abdomen very coarsely sparsely punctate; beneath more sparsely but less coarsely punctured than above. Length .34 inch; 8.5 mm.

Male—Unknown.

Female.—Anterior tarsi very slightly dilated; ventrals entire.

A pretty, graceful species resembling *baltimorensis* in its coloration, but differing in many other respects. Its thorax and head have much fewer punctures than any other species of the series.

I have seen but one specimen, sent me by Mr. Charles Dury, from Kentucky.

P. baltimorensis Grav.—Rufo-castaneous; head and thorax black; antennæ stout, much shorter than the head and thorax, piceous, apical joint pale, joints 4–10 short, moniliform, the outer ones quite transverse; head transversely quadrate, somewhat narrowed behind the eyes, very sparsely coarsely punctate at the sides and posteriorly; beneath smooth; thorax scarcely as wide as the head, a little longer than wide, distinctly narrower posteriorly; sides distinctly sinuate; surface sparsely and rather irregularly coarsely punctate, smooth at middle; elytra wider than the thorax, conjointly nearly square, rather coarsely not densely punctate, pubescence feeble, abdomen rather coarsely not densely punctate; beneath similarly punctured; legs piceous or black. Length .40—.52 inch; 10—13 mm.

Male.—Anterior tarsi moderately dilated; last ventral segment with a simple, small, oval emargination.

Female.—Anterior tarsi slightly dilated; last ventral entire.

A very striking species in its size, sculpture and color, and not resembling any other except the next.

Occurs in the Middle and Southern States.

P. apicalis Say.—Black, tips of abdomen rufo-castaneous; antennæ a little longer than the middle of the thorax, piceous, apical joint paler, joints 6–10 as wide as long; head quadrate, transverse, sparsely coarsely punctate, smooth at middle, beneath smooth; thorax a little narrower than the head, slightly longer than wide, slightly narrowed behind; sides sinuate; surface sparsely coarsely and irregularly punctate, median space smooth; elytra wider than the thorax, conjointly a little longer than wide, coarsely sparsely punctured, pubescence rather coarse; abdomen more coarsely punctured than the elytra; beneath less coarsely punctured. Length .36—.44 inch; 9—11 mm.

Male.—Anterior tarsi feebly dilated; last ventral segment with a small oval emargination.

Female.—Anterior tarsi scarcely dilated; last ventral entire.

Besides the color this species differs from the preceding in the form of the antennæ. These are longer, more slender and the joints not at all moniliform.

Occurs from Canada to Georgia.

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P. quadrulus n. sp.—Black, legs piceous; elytra very slightly bronzed; antennæ slender, as long as the head and thorax, joints all longer than wide; head coarsely and deeply punctured, especially in front, a small vertical space smooth, beneath smooth; thorax not wider than the head, longer than wide, slightly narrower posteriorly; sides slightly sinuate; surface very coarsely and deeply punctured, the punctures very irregularly placed at the sides, with an attempt at serial arrangement near the median smooth space; elytra wider than the thorax, longer than wide conjointly, densely punctate, sparsely pubescent; abdomen a little more finely and sparsely punctured than the elytra; beneath more finely punctured than above. Length .24 inch; 6 mm.

Male.—Anterior tarsi moderately dilated; last ventral segment with a triangular emargination surrounded by a depressed border.

Female.—Anterior tarsi narrowly dilated; last ventral entire.

Aside from the punctuation of the head and thorax the facies of this species is somewhat that of *puberulus* or *sordidus*. In common with the two preceding species this one has the thorax distinctly narrowed posteriorly.

Occurs in California and Arizona.

P. viridanus n. sp.—Form elongate, rather depressed, piceous; legs rufotestaceous; antennæ slender, a little longer than the head and thorax, piceous, basal joints paler, joints all much longer than wide: head quadrate, not large, coarsely and moderately closely punctured at the sides, smooth along the middle and in front, beneath punctate: thorax not wider than the head, longer than wide, very slightly narrower posteriorly; sides sinuate, punctures arranged in a crowded irregular series in the usual position, between which and the side there are very few punctures; elytra wider than the thorax, longer than wide conjointly; surface rather flat, closely but not coarsely punctate, sparsely pubescent; abdomen a little more finely but not more densely punctured than the elytra; beneath sparsely finely punctured. Length .30 inch; 7. 5 mm.

Male.—Anterior tarsi moderately dilated; last ventral segment with an oval emargination surrounded by a very narrow depressed margin; penultimate segment slightly sinuous at middle.

Female.—Anterior tarsi nearly as widely dilated; ventrals entire.

I adopt the name for this species under which it has been distributed by Fauvel, although I can hardly realize its applicability.

Occurs from the Middle States westward to Missouri.

P. confertus Lec.—Piceous, surface bronzed; antennæ as long as the head and thorax, piceous, two basal joints testaceous, joints 8–10 as wide as long; head orbicular, slightly bronzed: surface punctate, a smooth space at middle, very sparsely pubescent with short hair, beneath smooth; thorax a little wider than the head, oval, as wide as long, slightly narrowed in front; surface slightly bronzed, moderately densely and evenly punctate, finely pubescent, a smooth space along the middle; elytra a little wider than the thorax, but not longer, conjointly nearly square, slightly bronzed, very densely punctate, very finely pubescent; abdomen with similar punctures very sparsely placed; beneath a little more coarsely punctate and more densely at base; legs pale testaceous, coxæ piceous. Length .38 inch; 9.5 mm.

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Male.—Anterior tarsi rather broadly dilated; last ventral segment with a broadly triangular emargination surrounded by a slight depression.

Female.—Anterior tarsi moderately dilated; last ventral entire.

A very distinct species by the dense punctuation of the head and thorax. In form it resembles the larger specimens of *lomatus*.

Occurs in Canada, Iowa, Illinois and Kansas.

P. Lecontei n. sp.—Black, sometimes slightly bronzed, antennæ nearly as long as the head and thorax, black, joints 4–6 very little longer than wide, 7–10 as broad as long; head orbicular, coarsely punctured at the sides, a wide smooth space at middle, beneath with very few punctures; thorax a little wider than the head, as wide as long, distinctly narrowed in front, punctures coarse, rather sparsely and irregularly placed, each bearing a short hair, a broad median smooth space; elytra scarcely wider than the thorax, conjointly nearly square, densely punctured, sparsely pubescent; abdomen moderately densely punctured near the base, more sparsely near the tip; beneath more coarsely punctured than above. Length .36 inch; 9 mm.

Male.—Anterior tarsi very broadly dilated, patellate; last ventral with a large and deep triangular emargination surrounded by a distinct depressed margin extending in triangle forward; penultimate segment distinctly emarginate at middle and slightly depressed longitudinally.

Female.—Anterior tarsi moderately dilated; ventrals entire.

Apart from the sexual characters of the male it is very difficult to separate this species and the next. As a rule the antennæ of *Lecontei* are shorter and stouter, and the punctures of the thorax very irregularly placed, leaving larger, smooth spaces. As in the next species the elytra vary in color. They are normally entirely black, sometimes, however, reddish brown with a large oval black space extending from the base to the apex along the suture.

Occurs in California, also in Colorado.

P. aurulentus n. sp.—Black, surface slightly bronzed; legs sometimes piceous; antennæ slightly shorter than the head and thorax, piceous, joints 8–10 as wide as long; head sub-quadrate, coarsely punctate at the sides, smooth at middle and in front; beneath punctate at the sides; thorax very little wider than the head, as wide as long, distinctly narrowed in front; surface smooth at middle, at sides not densely nor coarsely punctured, the punctures very regularly placed, each bearing a short hair; elytra a little wider than the thorax, conjointly nearly square, moderately densely punctate, the punctures much finer than on the thorax; abdomen sparsely punctured, a little more finely than on the elytra; beneath more distinctly punctured than above, and rather more densely. Length .30—.38 inch; 7.5—9.5 mm.

Male.—Anterior tarsi broadly dilated; last ventral segment with a broadly triangular emargination, surrounded by a narrow depressed border.

Female.—Anterior tarsi moderately dilated; ventrals entire.

The color of the elytra varies here as in the preceding species. The differences have already been explained, but the sexual characters of the male are the only reliable means for separation.

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Occurs in Washington Territory, British Columbia, Colorado and Michigan. One in Dr. LeConte's cabinet is labeled Kentucky.

In addition to the foregoing series of species the following appear in the Catalogue of Gemminger and Harold:

P. ater Zieg. vide Horn, Trans. Am. Ent. Soc. 1878, p. 160.

P. nanus Mels. Proc. Acad. ii, p. 36. The length given for this species (1 line) is less than anything known to me. The dorsal punctures are said to be "three," which, by the system adopted in the preceding pages, would be reduced to two, a character entirely unknown in our fauna. It has been placed, I think erroneously, as a synonym of *hepaticus*.

P. cinctulus Mels. loc. cit. p. 37. Evidently described from a specimen of *hepaticus* with an accidental puncture on one side.

ACTOBIUS Fauvel.

Under this name Fauvel has separated from Philonthus a number of small species which differ in having the terminal joint of the maxillary palpi conical, but very acute and longer than the penultimate joint; the posterior tarsi have the first joint not longer than the fifth. The first four joints of the posterior tarsi decrease gradually in size, while in Philonthus the first joint is quite long. The thoracic punctuation in the European species is quite dense as in many of those in our fauna. Some of our species (*patella* and the four following) have a more oval thorax with the punctuation arranged in three irregular series on each side.

A small number of our species depart from the usual sombre coloring of the group and become parti-colored, recalling minature Paederi.

From their small size the piceous species are rather troublesome to separate, the greater difficulty being in the small group with oval thorax above mentioned. If it is remembered that *pusio* and *parcus* are very small species with elytral punctuation disproportionately coarse, the expression regarding the punctuation of the other three species will be better understood.

In all the species examined the males have the anterior tarsi dilated, usually moderately, rarely at all widely (*patella*) dilated, the last segment of the abdomen emarginate, although in many cases feebly so.

The under side of the head is always more or less punctured, sometimes densely, a character of rare occurrence in Philonthus (proper), and then only in the group with irregularly punctured thorax. The infra-orbital ridge exists in nearly all of the species to a feeble extent.

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The following table will assist in the identification of the species but should not (and the same is true of any synoptic table) be depended upon to the exclusion of the more extended description:

Upper surface black or piceous.....2.
Particolored species, thorax and legs always yellow .....11.
2.—Elytra very finely densely punctured and opaque.....3.
Elytra more or less shining, punctures distinct.....5.
3.—Head very densely punctured, opaque.....**cinerascens.**
Head more or less shining, punctures coarse, less dense.....4.
4.—Thorax oval, very little longer than wide, elytra longer than the thorax. **nanus.**
Thorax oval, distinctly narrower behind very little longer than wide, elytra not longer than the thorax.....**inutilis.**
Thorax oblong, much longer than wide, elytra depressed parallel, longer than the thorax .....**fraterculus.**
5.—Thorax oblong, narrower behind, the punctures numerous, without serial arrangement.....6.
Thorax more or less oval, not narrowed behind, the punctures not numerous, arranged in three irregular series on each side .....8.
6.—Abdomen above and beneath opaque, punctuation fine, the surface alutaceous, thoracic punctures fine and dense.....**senilis.**
Abdomen above and beneath shining, punctures sparse; thoracic punctures coarse the median space not sharply defined.....7.
7.—Elytral punctures close and inconspicuous; legs and antennæ piceous.
Elytra with narrow pale tips; antennæ slender.....**infimus.**
Elytra uniform in color; antennæ stout .....**semipunctatus.**
Elytral punctures conspicuous, not close.
Antennæ piceous, femora yellow, tibiæ and tarsi piceous.....**ocreatus.**
Antennæ brown, testaceous at base, legs yellow.
Elytra distinctly longer than the thorax, apex not sharply paler. **sobrinus.**
Elytra not longer than the thorax, punctuation less conspicuous and sparser, apex with well defined pale apex.....**agnatus.**
8.—Elytra finely and inconspicuously punctured.....9.
Elytra coarsely punctured (quite small species).....10.
9.—Piceous, legs paler, head sparsely punctured.
Elytra very densely punctured, sub-opaque .....**patella.**
Elytra shining, less densely punctured.....**loxatus.**
Black, legs piceous; head numerously punctured behind the eyes. **puncticeps.**
10.—Antennæ and legs piceous.....**pusio.**
Antennæ and legs pale .....**parcus.**
11.—Head and thorax yellow.....**gratus.**
Head black, thorax yellow.....12.
12.—Abdomen above and beneath at least moderately densely punctured, not shining.
Elytra less closely and more coarsely punctate.
Apex of elytra with very narrow pale border..... **pæderoides.**

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Elytra uniform in color and more elongate..... **jocosus.**
Elytra very densely punctate, apical pale border much wider externally. **jucundus.**
Abdomen very sparsely punctured and shining.. .....13.
13.—Elytra yellow, a piceous spot on each.....**elegantulus.**
Elytra dark, bordered at tip with yellow..... .....14.
14.—Head and thorax with numerous punctures.
Metathorax nearly black, elytra widely testaceous at tip.....**terminalis.**
Metathorax reddish, elytra narrowly bordered at tip.....**umbripennis.**
Head and thorax very sparsely punctured; metathorax pale...**lepidulus.**

A. cinerascens Grav.—Form moderately elongate, piceous, opaque; legs piceo-testaceous, the tibiæ and tarsi usually darker; antennæ shorter than the head and thorax, brownish, slightly thicker externally, the joints all longer than wide; head quadrate, very densely finely punctured and opaque, the vertex less punctured; beneath densely punctured, more coarsely than above; thorax not wider than the head, very little longer than wide; sides sinuate; surface rather closely coarsely punctate, leaving a narrow smooth space at middle; elytra slightly broader than the thorax, feebly convex, longer than wide conjointly, densely and finely punctured, sub-opaque, finely pubescent; abdomen densely very finely punctured and opaque, the segments paler at their apices; beneath densely, less finely punctured. Length .16—.20 inch; 4—5 mm.

Male.—Anterior tarsi slightly dilated; last ventral segment slightly emarginate.

Female.—Anterior tarsi very slightly dilated; last ventral entire.

This species is easily known by the generally dense punctuation of the upper surface. No other species in our fauna has the head so densely punctured beneath.

This species occurs from Michigan to Florida, and is also widely distributed in Europe.

A. nanus n. sp.—Form moderately elongate, black, moderately shining, legs piceo-testaceous; antennæ shorter than the head and thorax, rather slender, very slightly thicker externally, brown, the basal and apical joints paler, joints all longer than wide; head quadrate oval, moderately shining, moderately punctured at the sides and in front, a vertical smooth space, beneath closely punctate; thorax not wider than the head, slightly longer than wide; sides distinctly sinuate, disc shining, a broad median smooth space, sparsely coarsely punctured each side; elytra slightly wider than the thorax and longer, densely finely punctured, sub-opaque and sparsely pubescent; abdomen densely, very finely punctured, sub-opaque and pubescent; beneath densely punctulate, more shining than above. Length .18 inch: 4.5 mm.

Sexual characters as in *cinerascens*.

This species is generally smaller than *cinerascens*, and differs in the much less dense punctuation of the head and thorax.

Occurs in Canada, Michigan and the New England States.

A. inutilis n. sp.—Form rather slender, piceous, moderately shining, legs testaceous; antennæ shorter than the head and thorax, slightly thicker externally, brownish, joints 6–10 as wide as long; head quadrate oval, rather coarsely not densely punctured at the sides, beneath evidently punctured and alutaceous;

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thorax not wider than the head, longer than wide, slightly narrowed posteriorly; sides distinctly sinuate, median smooth space rather narrow, punctures at the sides coarse and not closely placed; elytra a little wider than the thorax but not longer, as wide conjointly as long; surface densely punctured but slightly shining, sparsely pubescent; abdomen very densely and finely punctulate and sub-opaque, sparsely pubescent; beneath densely punctulate, a little more shining than above. Length 14—.16 inch; 3.5—4 mm.

Sexual characters as in *cinerascens*.

This species resembles the preceding, but has the head and thorax more coarsely and less densely punctured. The elytra are also less opaque, and are not longer than the thorax as in *nanus*.

Occurs in Michigan and the New England States.

A. fraterculus n. sp.—Slender, elongate, parallel, rather depressed, piceous, sub-opaque; elytra brownish; antennæ pale brown, shorter than the head and thorax, joints 8–10 as wide as long; head quadrangular, coarsely but sparsely punctate, a median smooth space; beneath punctate and alutaceous; thorax not wider than the head, oblong oval, longer than wide, very little narrower behind; sides scarcely sinuate: surface coarsely but not closely punctate, a moderately broad median smooth space; elytra a little wider and very distinctly longer than the thorax, longer than wide conjointly, parallel, sub-depressed, moderately densely punctured, sub-opaque, finely pubescent; abdomen finely, moderately densely punctate, sub-opaque, finely pubescent; beneath more coarsely and less densely punctured; legs piceo-testaceous, or testaceous. Length .14 inch; 3.5 mm.

Male. Anterior tarsi moderately dilated; last ventral segment with oval emargination.

Female.—Anterior tarsi slightly dilated; last ventral entire.

Occurs in northern Illinois and Michigan.

This and the two preceding species form a small group, very naturally related and not easy to separate.

A. nanus is rather larger, and has more the form of *cinerascens*, the thorax broader in comparison with its length, and more decidedly oval, the sides more arcuate. The elytra are obviously longer than the thorax.

A. inutilis is slender, but more convex than the next species. The thorax is a little longer than wide, and very plainly narrower behind. The elytra are not longer than the thorax, and are nearly as wide as long.

A. fraterculus is more slender and depressed. The thorax very distinctly longer than wide, in fact oblong oval, and scarcely visibly narrower behind. The elytra are relatively longer than in the preceding species, longer than the thorax, and nearly a third longer than wide conjointly.

A. senilis n. sp.—Slender, piceous, nearly black; antennæ shorter than the head and thorax, piceous, joints 4–10 as wide as long, the outer ones a little wider: head quadrangular, moderately densely and rather coarsely punctured, a small smooth space on the vertex: beneath sparsely coarsely punctured: thorax not

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wider than the head, longer than wide, distinctly narrower behind; sides distinctly sinuate, densely and rather coarsely but very evenly punctured with a narrow smooth median space; elytra wider than the thorax, longer than wide conjointly, distinctly and closely punctured, the punctures much finer than on the thorax, sparsely finely pubescent; abdomen densely, very finely punctulate, feebly shining; beneath more opaque, the surface alutaceous, very finely but not densely punctulate. Length .16 inch; 4 mm.

Sexual characters as in *cinerascens*.

The punctures of the head and thorax although coarse are closely placed, those of the elytra are finer, rather closely placed, but the intervals are quite shining. The elytra are usually uniformly black, but sometimes narrowly testaceous at tip, and rarely with a slight aeneous lustre. The legs and coxæ are piceous.

Occurs in Colorado, Nevada and California.

A. infimus n. sp.—Form slender, elongate, rather depressed, black; elytra slightly bronzed with pale tips, legs piceous; antennæ brown, pale at base, nearly as long as the head and thorax, joints all longer than wide; head quadrate oval, coarsely and moderately closely punctured, a median smooth space; beneath very sparsely punctured; thorax not wider than the head, oblong, narrower behind; sides sinuate; surface coarsely and moderately closely punctured with a narrow median smooth space; elytra wider and longer than the thorax, much longer than wide conjointly; surface sparsely distinctly punctured, the interspace smooth, shining, sparsely pubescent; abdomen above moderately shining sparsely punctate, the punctures finer than on the elytra, sparsely pubescent; beneath sparsely punctate, the segments paler at their apices. Length .18 inch; 4.5 mm.

Male.—Anterior tarsi moderately dilated; last ventral segment triangularly emarginate.

Female.—Anterior tarsi narrowly dilated; last ventral entire.

This species and several of the following differ from those previously described, by having the elytral punctures distinct and separated, so that the intervals are quite smooth and shining. The punctuation of the abdomen is also quite sparse. In general appearance this species resembles *senilis*.

Occurs in the vicinity of San Jose, California.

A. semipunctatus F. et G.—Form slender, elongate, sub-depressed, piceous; antennæ pale brown, three basal joints paler, in length barely reaching the middle of the thorax, joints 5-10 as broad or broader than long, the outer ones quite transverse; head quadrate oval, coarsely and moderately closely punctured, a median smooth space; beneath sparsely coarsely punctate; thorax not wider than the head, oblong, slightly narrower behind, the sides sinuate; surface shining, coarsely but not very densely punctured, a median smooth space; elytra wider and longer than the thorax, longer than wide conjointly; surface sparsely finely punctured, the intervals smooth, sparsely pubescent, color uniformly dark brown without aeneous lustre, the tip not sharply paler; abdomen above slightly shining, sparsely but very regularly punctate; beneath sparsely punctate; legs piceous. Length .16 inch; 4 mm.

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The sexual characters are not materially different from those of the preceding species to which it is otherwise very closely related. It differs in its shorter and stouter antennæ, and by the absence of well defined pale apical margin of the elytra.

The identification of this species is due to Mr. Fauvel.

Occurs in Colorado and Nevada, having been originally described from Santiago, Chili.

A. ocreatus n. sp.—Slender, very black and shining; elytra with a slight bronze tinge and narrowly margined at tip with testaceous; coxæ, tibiæ and tarsi piceous, femora yellow; antennæ black, basal joint testaceous, shorter than the head and thorax, gradually thicker externally, joints 6–10 as wide as long; head oval, slightly narrowed behind the eyes, coarsely very sparsely punctate at the sides; beneath with very few punctures; thorax not wider than the head, longer than wide, slightly narrower posteriorly; sides sinuate; surface very coarsely sparsely punctured, a broad median smooth space; elytra a little wider and longer than the thorax, longer than wide conjointly, sparsely and rather coarsely punctured, shining, very sparsely pubescent; abdomen above shining, very sparsely pubescent; abdomen above shining, very sparsely punctate and pubescent; beneath a little more distinctly punctate. Length .16—.18 inch; 4—4.5 mm.

Male.—Anterior tarsi moderately dilated; last ventral with feeble oval emargination and slight triangular impression.

Female.—Anterior tarsi slightly dilated; last ventral entire.

The elytra are much more sparsely punctured than in *infimus*, but less coarsely than in *sobrinus*. The legs are quite constant in the relative color of the parts, but vary somewhat in the degree of color.

Occurs in various parts of California from the middle regions southward.

A. sobrinus Erichs.—Form slender, elongate, brownish or piceous, moderately shining; legs pale testaceous; antennæ shorter than the head and thorax, somewhat thicker externally, brownish, apical and two basal joints paler, joints 7–10 as wide as long; head quadrate oval, shining, sparsely coarsely punctured; beneath more coarsely punctate; thorax not wider than the head, narrower behind; sides smooth, longer than wide, median space smooth at sides, very coarsely and rather closely punctate; elytra a little wider and longer than the thorax, longer than wide conjointly, coarsely punctate, intervals smooth shining, sparsely pubescent, color usually paler than the thorax, the apex conspicuously so; abdomen shining, very sparsely pubescent, sparsely punctate; beneath the segments paler at tip, sparsely punctate. Length .18—.22 inch; 4.5—5.5 mm.

Sexual characters as in *ocreatus*.

This species is easily known among the piceous species with oblong thorax by its very pale yellow legs.

Occurs everywhere in our fauna east of the Rocky Mountains. I have one specimen from Fort Yuma, California.

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A. agnatus Erichs.—Form slender, elongate, piceous, shining; apical margin of elytra and legs testaceous; antennæ shorter than the head and thorax, brownish, two basal joints not conspicuously paler; head quadrate oval, slightly narrowed behind the eyes, sparsely punctate, median smooth space small; beneath coarsely sparsely punctured; thorax as in *sobrinus*; elytra not longer than the thorax, more convex than in *sobrinus*, less coarsely and more sparsely punctate, apical pale margin sharply defined; abdomen as in *sobrinus*. Length .16—.18 inch; 4—4.5 mm.

Male.—Anterior tarsi moderately dilated: last ventral segment with small triangular emargination.

Female—Anterior tarsi narrowly dilated; last ventral entire.

I owe the identification of this species to Mr. Fauvel. It resembles *sobrinus* very closely, and might readily be mistaken for it. The antennæ are not pale at tip, the elytra shorter and less conspicuously punctate.

Occurs in our fauna in Louisiana, described by Erichson from Columbia, S. A.

A. patella n. sp.—Piceous or brownish, form of *cinerascens*, legs brownish testaceous; antennæ ferruginous, shorter than the head and thorax, slender, joints longer than wide; head quadrate oval. slightly narrower behind the eyes, coarsely very sparsely punctate at the sides; beneath nearly smooth; thorax very little wider than the head, but little longer than broad; sides very slightly sinuate; surface very shining, the punctures not numerous, but disposed in three irregular series on each side; elytra a little wider than the thorax and but little longer, conjointly nearly square, densely finely punctured. opaque, finely pubescent; abdomen opaque, very finely densely punctulate, finely pubescent; beneath more evidently punctured than above, margins of the segments paler. Length .20 inch; 5 mm.

Male.—Anterior tarsi broadly dilated; last ventral segment rather deeply, but narrowly triangularly incised.

Female.—Anterior tarsi slightly dilated; last ventral entire.

This species has the same general form and appearance as *cinerascens*, but differs in the form and sculpture of the head and thorax.

Occurs in Michigan and New York.

A. loxatus n. sp.—Black, shining, form broader than *cinerascens*, legs piceous; antennæ brownish. shorter than the head and thorax, slender, joints longer than wide; head quadrate oval, shining, very few punctures at the sides; beneath sparsely coarsely punctured. more opaque; thorax not wider than the head, nearly as wide as long, slightly narrower behind; sides scarcely sinuate; surface shining, punctures coarse, arranged in three irregular series; elytra wider than the thorax and slightly longer, conjointly longer than wide; surface shining, moderately closely punctate, sparsely pubescent; abdomen slightly opaque, the punctuation indistinct, but not dense; beneath sub-opaque, the punctuation rather more distinct. Length .20—.22 inch; 5—5.5 mm.

Male.—Anterior tarsi, moderately dilated; last ventral segment with a very small triangular emargination.

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This species could only be mistaken for *patella*, but it has less densely punctured elytra, which are also more shining. The male sexual characters are also different.

Occurs in the District of Columbia.

A. puncticeps n. sp.—Form moderately elongate, black, shining; legs piceous; antennæ brown, not as long as the head and thorax, joints all longer than wide; head quadrate oval, with very numerous punctures behind the eyes and on the under side; thorax very little longer than wide, not wider than the head, not narrowed behind; sides scarcely sinuate; surface shining, punctures coarse not numerous, arranged in three series on each side, the inner quite regular, and composed of seven or eight punctures; elytra scarcely wider than the thorax and very little longer, conjointly a little longer than wide; surface sub-opaque, densely punctured, sparsely pubescent; abdomen feebly shining, moderately densely punctulate; beneath as above. Length .16—.18 inch; 4—4.5 mm.

Male.—Anterior tarsi slightly dilated; last ventral with very slight emargination.

Female.—Anterior tarsi very slightly dilated; last ventral entire.

This species recalls *nanus* in appearance, but differs greatly in various details. Among the species with the broader thorax it may be known by the numerous punctures at the sides and beneath the head.

Occurs in the southern part of California.

A. parcus n. sp.—Black, shining; antennæ brown; legs testaceous; antennæ slightly shorter than the head and thorax, slightly thicker externally, brown, terminal joints paler, joints all at least as long as wide: head oval, sparsely coarsely punctured at the sides: beneath sparsely punctate, alutaceous; thorax scarcely wider than the head, very little longer than wide; sides very slightly sinuate; surface very shining with the punctures arranged in three series, the middle one composed of seven coarse punctures arranged in a regular series: elytra a little wider and longer than the thorax, conjointly but little longer than wide: surface shining, coarsely punctate, sparsely pubescent; abdomen moderately shining, punctures less coarse than on the elytra; beneath somewhat more shining and more distinctly punctured, margins of the segments paler. Length .14 inch; 3.5 mm.

Male.—Anterior tarsi moderately dilated; last ventral with a barely perceptible emargination.

Female.—Anterior tarsi scarcely dilated; last ventral entire.

This species resembles greatly some of the smaller forms of *nigritulus*, but may be known by the tarsal structure and the thoracic punctures.

Occurs from Michigan to the District of Columbia.

A. pusio n. sp.—Piceous, shining; antennæ piceous, terminal joint pale, shorter than the head and thorax, joints 6-10 as wide as long; head oval, sparsely punctate at the sides; beneath sparsely punctate, shining; thorax shining, not wider than the head, very little longer than wide; sides feebly sinuate, punctures arranged in three irregular series on each side, the inner series sinuous, composed of seven or eight punctures; elytra a little wider than the thorax and notably

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longer, longer than wide conjointly, shining, coarsely not closely punctate, sparsely pubescent; abdomen moderately shining, sparsely punctate; beneath less distinctly punctate. Length .11 inch: less than 3 mm.

Female.—Anterior tarsi scarcely at all dilated; last ventral entire.

This is the smallest species known to me in our fauna. It resembles *parcus*, and differs in the darker legs and antennæ, more finely and irregularly punctured thorax and more coarsely punctured elytra.

Two specimens. Garland, Colorado.

A. gratus Lec.—Form moderately elongate, reddish yellow, rather shining, metasternum, tip of abdomen and elytral space black; antennæ nearly as long as the head and thorax, rather slender, nearly black, the two basal joints pale; head quadrate, coarsely not densely punctured at the sides; beneath obsoletely sparsely punctate; thorax not wider than the head, longer than wide, slightly narrowed posteriorly; sides slightly sinuate, median space smooth; sides rather coarsely moderately closely punctured; elytra slightly wider than the thorax and somewhat longer, longer than wide conjointly, moderately closely punctate, yellow, with a large oval piceous spot, which joins the side margin; abdomen much less coarsely punctured than the elytra; beneath more shining and more coarsely punctured than above, last two segments black. Length .20 inch; 5 mm.

Male.—Anterior tarsi broadly dilated; last ventral segment with rather large oval emargination.

Female.—Anterior tarsi narrowly dilated; last ventral entire.

A pretty species, varying in the size of the elytral spot, and is easily known by being the only one in our fauna with a pale head.

Occurs in the south of California and Arizona.

A. pæderoides Lec.—Form slender, elongate; head, body, elytra and tip of abdomen black; thorax, base of abdomen and legs yellow; antennæ slender, piceous, three basal joints paler, joints 6–10 as wide as long; head black, neck yellow; surface coarsely sparsely punctate, a median smooth space; beneath sparsely coarsely punctate; thorax oblong, not wider than the head, slightly narrower behind; sides distinctly sinuate, punctures coarse, not densely placed, leaving only a narrow smooth space; elytra black, shining, sometimes slightly bluish; apex narrowly margined with testaceous, punctures rather coarse not densely placed; surface sparsely pubescent; abdomen finely moderately densely punctate, finely pubescent; beneath more distinctly punctured than above. Length .14—.18 inch; 3.5—4.5 mm.

Male.—Anterior tarsi moderately dilated; last ventral with a feeble emargination and slight triangular impression.

Female.—Anterior tarsi slightly dilated; last ventral entire.

There is some variation in sculpture as well as in size in this species. The eastern forms, more especially those from the northern regions, are more coarsely punctured and of larger size; the California and Arizona specimens are always smaller, and with a finer and slightly denser punctuation.

Occurs everywhere from Canada to Florida, and westward to the Pacific coast.

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A. jocosus n. sp.—Form elongate, rather slender, parallel; antennæ nearly as long as the head and thorax, brown, the basal joints testaceous, apical joint pale brown, joints 5–10 as broad as long; head quadrangular, black, shining, coarsely not closely punctate, a small median smooth space; beneath very sparsely punctate; thorax scarcely wider than the head, oblong, very slightly narrowed behind, sides slightly sinuate, surface coarsely not closely punctate, a narrow median smooth space, color reddish yellow; elytra nearly parallel, very little wider, but distinctly longer than the thorax, color piceous, shining, apical margin not pale, surface relatively coarsely and closely punctate, very sparsely pubescent; abdomen reddish yellow, the two apical segments paler; surface moderately closely punctate, very feebly shining, sparsely pubescent; beneath as above; legs pale yellow, metasternum piceous. Length .18 inch; 4.5 mm.

Male.—Anterior tarsi moderately dilated; last ventral segment with a small triangularly oval emargination.

Female.—Last ventral entire; anterior tarsi narrowly dilated.

I have seen but two specimens of this species. It is larger than *pæderoides*, the elytra longer and more coarsely punctured and without apical pale border.

Occurs in Delaware and North Carolina.

A. jucundus n. sp.—Form, size and color of *pæderoides*, and differs by the surface, especially the elytra more densely punctured and opaque, and the apical pale border of the elytra broader, and gradually wider externally; the head is distinctly narrower behind the eyes. Length .14 inch; 3.5 mm.

I have seen but two specimens, both apparently females.

Occurs in South Carolina, and seems to be rare.

A. elegantulus n. sp.—Slender, elongate, pale yellow; head and elytral spot black, metasternum and tip of abdomen above piceous; antennæ slender, nearly as long as the head and thorax, piceous, basal joint paler, joints 7–10 nearly as wide as long; head oval, distinctly narrower behind the eyes, shining, coarsely punctate at the sides and beneath; thorax not wider than the head, oblong, distinctly narrowed behind, sides sinuate, sparsely coarsely punctate at the sides; elytra a little wider and longer than the thorax, longer than wide conjointly; surface very shining, coarsely and sparsely punctate, very slightly pubescent; color yellow, with an oval spot, black on each side, of variable size; abdomen shining, very sparsely punctate, and with very little pubescence, terminal two segments darker in color; beneath shining, very sparsely punctate. Length .16—.18 inch; 4—4.5 mm.

Male.—Anterior tarsi slightly dilated; last ventral with a broad, but not deep oval emargination.

Female.—Anterior tarsi feebly dilated; last ventral entire.

A pretty species, easily known by its very sparsely punctate surface, and by the elytra almost entirely yellow.

Occurs in southern California and Arizona.

A. terminalis Lec.—Form slender, pale reddish yellow, head, metasternum, elytra in part, and last two segments of abdomen black; antennæ pale brown, nearly as long as the head and thorax, joints 6–10 as broad as long; head quadrate

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oval, coarsely punctured at the sides, sparsely coarsely punctured beneath; thorax not wider than the head, oblong, narrower behind; sides distinctly sinuate, a median smooth space, at sides coarsely and deeply, not closely punctured; elytra a little wider and longer than the thorax, conjointly longer than wide, coarsely not densely punctured, sparsely pubescent, color black at basal two-thirds, reddish yellow at apical third; abdomen shining, coarsely very sparsely punctate, sparsely pubescent; beneath as above. Length .18 inch; 4.5 mm.

Male.—Anterior tarsi slightly dilated; last ventral with slight oval emargination.

Female.—Anterior tarsi scarcely at all dilated; last ventral entire.

This species, in color and general appearance, resembles *pæderoides*, but the elytra are more widely yellow at tip, and the abdominal punctures much coarser and far less dense.

The species as above defined is divided by Fauvel into two,—*Schmelteri* and *terminalis*. The former is really the typical form, and has darker antennæ, and the elytra are more evidently punctured; the latter has pale antennæ and less distinctly punctured elytra. With more specimens than I now possess it is possible that two distinct species could be defined, at present I prefer to retain them as one. Should they prove distinct the names suggested by Fauvel should be reversed.

Occurs from Canada to Middle States, also in Texas.

A. umbripennis Lec.—Form of *terminalis*; antennæ piceous, paler at base, shorter than head and thorax, joints 5–10 at least as wide as long, the outer ones quite transverse; head oval, distinctly narrowed behind the eyes, piceous, shining; surface numerously punctured, beneath very sparsely punctate; thorax not wider than the head, longer than wide, slightly narrowed behind; sides distinctly sinuate, disc smooth at middle, punctured at the sides; metasternum pale reddish brown; elytra wider than the thorax and a little longer, longer than wide conjointly; surface moderately punctate, sparsely pubescent, color piceous, the apical margin narrowly testaceous; abdomen reddish brown, the two apical segments usually darker; surface coarsely sparsely punctate, sparsely pubescent; beneath darker than above, the segments broadly paler at tip, punctuation closer than above. Length .14 inch; 3.5 mm.

Male.—Unknown.

Female.—Anterior tarsi moderately dilated; last ventral entire.

This species might be confused with *terminalis*, but the elytra are colored as in *pæderoides*. The punctuation of the upper surface is much less pronounced than in either of the two species named. The last two ventral segments are never so distinctly darker, and some specimens have the abdomen uniformly brown in color.

Occurs from Pennsylvania to Florida.

A. lepidulus Lec.—Form slender; antennæ brown, nearly as long as the head and thorax, joints 7–10 as wide as long; head broadly oval, very distinctly narrowed behind the eyes, black, shining, with very few punctures; beneath paler in color, with a few coarse punctures; thorax yellow, not wider than the head,

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longer than wide, slightly narrower behind; sides distinctly sinuate, punctures arranged in three very irregular series on each side, not numerous; elytra a little wider and longer than the thorax, a little longer than wide conjointly, piceous, apical margin narrowly testaceous, punctures moderate in size and very sparsely placed; surface shining, pubescence very sparse; abdomen uniformly brown, apices of segments paler, very shining, punctuation and pubescence very sparse; beneath uniformly brownish testaceous, punctured as above; metasternum piceous. Length .13 inch; 3.5 (nearly) mm.

The only specimen known to me is a female. The anterior tarsi are scarcely at all dilated. This species resembles *umbripennis* more closely than any other, and is known by the very sparsely punctate surface and somewhat longer and more slender antennæ.

One specimen, Georgia.

CAFIUS Steph.

This genus was first defined by Stephens, but not recognized as sufficiently distinct from Philonthus by Erichson, by whom the species were placed as a section of the latter genus. The characters are really feeble but sufficiently constant, and the facies is certainly sufficiently well marked.

The posterior tarsi are constructed in the same manner as in Philonthus, that is, the first joint is quite long and rather longer than the fifth. The last joint of the palpi is described by Fauvel (Faune Gallo-Rhénane) as securiform, but I think this too strong a term, and the shape is to be better expressed by — elongate oval flattened, more convex on the inner side.

The species of Cafius have a very characteristic facies except as to the first two species. These should probably be referred to Sharp's genus Phucobius (Trans. Ent. Soc. Lond., 1874, p. 35). In its habitat Cafius is confined to the sea-coast and margins of tide-water streams. Of the ten species known in our fauna two belong to the Atlantic coast the others to the Pacific.

The following table is arranged more for convenience in the recognition of species than as exhibiting any relation among them based on facies, the latter I have attempted to indicate by their position on the subsequent pages.

The characters made use of in the table are sufficiently plain without explanation except, possibly, the reference to the sharply defined median space of the thorax. In all the species except *femoralis*, the median space is more convex, and is sharply limited by the lateral punctures; in that species, however, the median space is not more convex, and the limit of the smooth space is very irregular.

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Thorax as wide, or wider than long, smooth at the sides; anterior femora with short spinous hairs beneath.

Raised line at base of dorsal segments scarcely sinuate; ventral segments not unequally punctate..... **canescens.**

Raised line very sinuous at middle; last two ventral segments much more densely and finely punctured..... **seminitens.**

Thorax longer than wide, more or less narrowed behind, sides punctured; anterior femora simple.

Antennæ rather slender, joints 3–10 nearly equal in length, and twice as long as wide..... **opacus.**

Antennæ shorter and stouter, joints 3–10 gradually decreasing in length, the outer ones square, or even transverse in some.

Median smooth space not sharply limited, and not more convex. **femoralis.**

Median smooth space sharply defined, and very distinctly more convex.

Head with very large punctures both above and beneath. **lithocharinus.**

Head always more finely and sparsely punctured beneath than above.

Elytra pale yellow..... **luteipennis.**

Elytra piceous or brown.

Elytra densely, finely punctured, opaque..... **sericeus.**

Elytra closely punctate, not opaque, the punctures always distinct.

Thorax very coarsely punctured at the sides; median smooth space limited each side by a row of coarse punctures; thorax and elytra piceous, nearly black. ..... **bistriatus.**

Thorax coarsely punctured; median smooth space not limited by a row of punctures; thorax and elytra ferruginous. **decipiens.**

Thorax sparsely punctate at the sides, the punctures rather feebly impressed, thorax and elytra dark brown..... **sulcicollis.**

C. canescens Mann.—Form parallel, piceous, very faintly bronzed, side margin of elytra often paler, clothed with fine gray silken pubescence; antennæ stout, piceous, attaining the middle of the thorax, the joints 4–10 not longer than wide, gradually broader; head moderately large, quadrate, slightly wider behind the eyes; surface shining, front broadly sulcate at middle, a broad fovea each side; posteriorly a few large ill-defined punctures; beneath sub-opaque, with a few punctures; thorax not larger in area than the head, broader than long, scarcely narrower behind; sides distinctly sinuate, disc smooth, vaguely sulcate each side of middle, the sulci with a row of about ten punctures, the intermediate space more convex and more elevated posteriorly, extreme side margin opaque, with a few indistinct punctures; elytra a little wider than the thorax, longer than wide conjointly, densely punctate and sub-opaque, finely pubescent; abdomen sub-opaque, punctuation moderately dense and finer than on the elytra, pubescence fine, holosericeous, each segment with a vague fovea on each side, the basal elevated line simply feebly arcuate; beneath coarsely sparsely punctate, sparsely pubescent; legs and coxæ piceous. Length .36—.40 inch; 9–10 mm.

Male.—Anterior tarsi broadly dilated; last ventral with an elongate triangular incisure, the penultimate also slightly sinuate at middle.

Female.—Anterior tarsi moderately dilated; last ventral entire.

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In this and the next species the anterior femora are provided with slightly spinous but very short hairs on the under side. They belong to *Phucobius* Sharp.

Occurs abundantly on the Pacific sea-coast.

C. semilitens n. sp.—Form and color of *canescens*; antennæ piceous, short, scarcely passing the hind angles of the head, joints 4–10 wider than long, gradually broader externally, the outer joints very transverse; head as in *canescens*, a frontal and vertical median impression, a few large punctures often in a series on each side converging at the occiput, under side alutaceous, more distinctly punctate than *canescens*; thorax as in *canescens*, very shining; sulci obliterated, and replaced by a few large distantly placed punctures; median line vaguely impressed anteriorly; side margin sub-opaque, with a few coarse punctures; elytra as in *canescens*; abdomen with punctuation and pubescence as in *canescens*; basal line bisinuous at middle; beneath with two apical segments very closely punctate, the anterior segments very sparsely punctate; legs piceous. Length .36—.40 inch; 9–10 mm.

Male.—Last ventral segment triangularly emarginate, and on each side sinuate; anterior tarsi moderately dilated.

Female.—As in *canescens*.

This species closely resembles *canescens*, but is abundantly distinct by the shorter antennæ, the thoracic sculpture, the form of the raised abdominal line and the ventral punctuation.

Occurs on the California sea-coast, but is more rare than *canescens*.

C. lithocharinus Lec.—Form elongate, depressed, piceous; elytra with side margin and apical spot luteous; legs rufo-testaceous; antennæ piceous, barely reaching the middle of the thorax, joints 4–10 nearly square; head large, quadrate, larger in the male, and larger in area in both sexes than the thorax; surface opaque, alutaceous, a smooth median space; sides with coarse rather closely placed variolate punctures; beneath less opaque, coarsely punctate; sub-mentum very opaque, black; thorax narrower than the head, longer than wide, narrowed posteriorly; sides distinctly sinuate; surface opaque, the median space smooth, shining, more convex, not defined by a row of punctures; sides moderately coarsely and closely punctate, the punctures much finer than those on the head; elytra wider and longer than the thorax, longer than wide conjointly, lateral margin and apical spot pale, finely and closely punctate, finely pubescent; abdomen piceous the apical segment sometimes ferruginous, rather finely but not closely punctate, finely pubescent, elevated line at base of segments straight; beneath piceous, the apical segment and the sides often ferruginous, very sparsely finely punctate. Length .24—.36 inch; 6–9 mm.

Male.—Anterior tarsi slightly dilated; last ventral segment with small triangular emargination, the entire apical margin with a pellucid border.

Female.—Anterior tarsi nearly as broad as in the male; last ventral entire, with a narrow pellucid margin.

The apical pale spot of the elytra varies; it is sometimes entirely wanting, and rarely extends across the entire apex. The species is readily known by the very coarse punctuation of the head on both the upper and under sides.

Occurs on the California sea-coast.

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C. luteipennis n. sp.—Form moderately elongate, piceous; elytra pale yellow; antennæ piceous, and very nearly as long as the head and thorax, joints 3–10 gradually decreasing in length, the outer ones nearly square; head quadrate, similar in the sexes; surface moderately shining, a rather broad median smooth space; sides with coarse, not closely placed punctures; beneath more sparsely and finely punctured than above; sub-mentum opaque; thorax as wide as the head, longer than wide, narrowed behind; sides distinctly sinuate, median smooth space more convex, more elevated posteriorly, not defined by a row of punctures, lateral region less coarsely punctured than the head; elytra longer and wider than the thorax, longer than wide conjointly; surface finely and moderately densely punctured, finely pubescent; abdomen piceous, the apical segment sometimes paler, punctuation finer but less dense than on the elytra, pubescence fine and brown; beneath more shining, the apical segment and often the sides paler, punctuation a little coarser but sparser than above; legs and coxæ piceous. Length .22—.28 inch; 5.5—7 mm.

Male.—Anterior tarsi rather widely dilated; last ventral segment with a small broadly triangular notch with pellucid border.

Female.—Anterior tarsi moderately dilated; last ventral entire.

A pretty species, readily known by the pale yellow elytra. It is related to *lithocharinus* by its form, but differs too plainly to require special comparison.

Occurs on the California sea-coast.

C. bistriatus Erichs.—Piceous, elongate, legs and coxæ rufo-testaceous; antennæ piceous, nearly as long as the head and thorax, not stout, joints 5-10 as wide as long; head quadrate, sub-opaque, a median smooth space widening in front and including the entire clypeus; sides coarsely not closely punctate; beneath more shining, coarsely punctate at the sides; sub-mentum opaque, black; thorax not wider than the head, longer than wide, narrower posteriorly; sides sinuate, median smooth space sharply defined each side by a row of closely placed punctures; sides less coarsely punctate than the head; elytra wider and longer than the thorax, longer than wide conjointly, rather finely and closely punctate, finely pubescent; abdomen piceous, above and beneath more finely and closely punctate than the elytra. Length .24—.30 inch; 6.—7.5 mm.

Male.—Anterior tarsi slightly dilated; last ventral with a triangular emargination, which has internally a pellucid border.

Female.—Anterior tarsi slightly dilated; last ventral entire.

There is a very distinct line of larger punctures defining the median smooth space, and between them and the normal lateral punctuation is another narrow smooth space. A similar character is observed in *sulcicollis*.

Occurs on the Atlantic coast and on the margins of tide-water streams.

C. sulcicollis Lec.—Form elongate, depressed, color brown, head darker, legs paler; antennæ brown, nearly as long as the head and thorax, joints 4–10 not longer than wide; head quadrate, dark brown, opaque, alutaceous, a median and frontal impunctured space; sides sparsely not coarsely punctate; thorax not wider than the head, longer than wide, narrower behind; sides distinctly sinuate, median smooth space more convex, indistinctly limited with fine punctures irregularly

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placed; sides sparsely finely punctured; elytra wider and longer than the thorax, longer than wide conjointly, densely finely punctured, very feebly shining, finely pubescent; abdomen a little more finely and as densely punctured as the elytra; beneath less densely punctured. Length .20 inch; 5 mm.

Male.—Not seen.

Female.—Anterior tarsi slightly dilated; last ventral entire.

More closely related to *bistriatus* than any other, yet plainly distinct by many characters.

Occurs on the California sea-coast.

C. femoralis Mäklin.—Form slender, depressed, piceous, sub-opaque, femora and coxæ testaceous; antennæ piceous, nearly as long as the head and thorax, joints 3–10 gradually decreasing in length, joints 8–10 as wide as long; head quadrate, opaque, alutaceous, median space less punctured; sides coarsely and closely punctured; beneath less coarsely punctured than above, sub-mentum shining; thorax not wider than the head, longer than wide, narrower posteriorly; sides distinctly sinuate, median space not more convex, not distinctly limited, punctures at sides dense and rather fine; elytra wider and longer than the thorax, conjointly longer than wide, densely finely punctured, but not opaque, finely pubescent: abdomen densely finely punctured, more shining beneath, finely pubescent; femora and coxæ pale, tibiæ and tarsi piceous. Length .24 inch; 6 mm.

Male.—Not seen.

Female.—Anterior tarsi slightly dilated; last ventral entire.

At first sight this species resembles *bistriatus*, but is easily known by the color of the legs and by the indistinctly limited median space of the thorax.

Occurs on the coast of Alaska.

C. sericeus Holme.—Form slender, depressed, piceous, nearly black, opaque; antennæ piceous, nearly as long as the head and thorax, joints 4–10 nearly square; head quadrate oval, a median smooth space broader on the occiput; sides rather coarsely punctate; beneath punctate at the sides, nearly smooth at middle, submentum sub-opaque; thorax as wide as the head, longer than wide, very little narrower posteriorly; sides feebly sinuate, median smooth space well defined, but not limited by a median row of punctures, more convex, especially posteriorly, at sides finely punctate, the punctures less dense anteriorly; elytra longer and wider than the thorax, longer than wide conjointly, very densely finely punctured and opaque, finely pubescent; abdomen above and beneath very densely finely punctulate, more shining than the elytra. Length .14—.16 inch; 3.5—4 mm.

Male.—Anterior tarsi moderately dilated; last ventral segment with an oval emargination.

Female.—Anterior tarsi slightly dilated; last ventral entire.

A common European species, apparently rather rare with us. The American specimens are more slender than the European, but do not seem to differ otherwise. The specimens before me are from an uncertain locality, but possibly from Coney Island, near New York.

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C. decipiens Lec.—Form moderately elongate and depressed, color reddish brown, thorax paler, head darker; antennæ pale reddish brown, nearly as long as the head and thorax, joints 4–10 as wide as long; head quadrate oval, opaque, alutaceous, an oval smooth space at middle; sides coarsely, not closely punctate; beneath much more finely punctate than above, sub-mentum black, opaque; thorax as wide as the head, longer than wide, distinctly narrowed posteriorly; sides feebly sinuate, median smooth space more convex, without row of punctures each side; sides not closely punctate, the punctures finer than on the head; elytra wider, very little longer than the thorax, a little longer than wide; surface opaque, punctuation not very distinct, not dense, pubescence fine; abdomen more shining than the elytra, punctuation coarser and less close; beneath more finely punctured than above; legs brownish testaceous. Length .18—.20 inch; 4.5—5 mm.

Male—Anterior tarsi moderately dilated; last ventral segment with a small triangular emargination with a pellucid border.

Female.—Anterior tarsi slightly dilated; last ventral entire.

This species is easily known by its small size and color.

Occurs on the California sea-coast at San Diego.

C. opacus Lec.—Form elongate, depressed, color ferruginous, elytra darker; antennæ slender, longer than the head and thorax, joints 3–11 nearly equal in length, twice as long as wide, color pale reddish brown; head quadrate oval, wider behind, longer in the male, reddish brown, sometimes piceous in front, opaque, median smooth space indistinct, rather densely punctate and alutaceous; beneath more sparsely punctured than above, more shining, sub-mentum shining; thorax not wider than the head, longer than wide, slightly narrowed behind; sides feebly sinuate, median smooth space more convex; sides moderately closely punctate and sub-opaque; elytra wider, very little longer than the thorax, longer than wide conjointly, sub-opaque, densely punctulate and finely pubescent; abdomen more shining, less closely and more coarsely punctured than the elytra; beneath punctured as above. Length .26—.34 inch; 6.5—8.5 mm.

Male.—Anterior tarsi broadly dilated; last ventral with a triangular emargination, the inner border pellucid.

Female.—Anterior tarsi nearly as wide as in the male; last ventral entire.

The color of this species is somewhat variable from rufo-ferruginous to brown. It is the only one in our fauna with the antennæ longer than the head and thorax.

Occurs on the California sea-coast.

Additions and Notes.

The following species was received too late to be inserted in its proper place:

P. inversus n. sp.—Form moderately elongate, piceous, very sparsely pubescent, thorax, elytra and legs rufo-testaceous; antennæ as long as the head and thorax, brownish, two basal joints testaceous, joints 4–10 quadrate, or slightly transverse; head piceous, oval, a few coarse punctures behind the eyes; thorax not wider than the head, oval, longer than wide, sides parallel, scarcely sinuate

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posteriorly, dorsal punctures four moderately impressed, the posterior puncture more distant than the others; elytra a little wider than the thorax, slightly wider posteriorly, a little longer than wide conjointly, very slightly longer than the thorax, punctuation coarse, not densely placed; abdomen iridescent, punctuation very sparse and very much finer than on the elytra, beneath punctured as above. Length .20—.24 inch; 5—6 mm.

Male.—Anterior tarsi slender; last ventral segment with a broad but shallow emargination, bordered by a pellucid membrane.

Female.—Tarsi slender; last ventral entire.

This species is probably identical with a specimen ♀ loaned me by Mr. Fauvel with the name *Schwarzi*. Considering the material insufficient I passed it by, having used the name for a more imposing species. As will be observed by the sexual characters the species belongs to series D (ante p. 206), and to the quadripunctate division, and is most closely related to *distans* and *fallaciosus*. In these two species the dorsal punctures of the thorax are arranged with the first puncture more distant, notably so in *distans*, less in the other. In the present species the arrangement is reversed, the posterior puncture being more distant. By its sexual characters *inversus* is more allied to *distans*, but the last ventral ♂ has no longitudinal impression.

I have two anomalous female specimens, one of them has *three* dorsal punctures on each side, the second has *five* on one side and *four* on the other.

Garland, Colorado, kindly given me by Mr. E. A. Schwarz.

P. piger should be omitted from the table on p. 219, it is *Actobius senilis*, p. 226.

The species have, by the foregoing pages, been greatly increased in number beyond those now in our lists; many are here described as new, while a number have been recognized as identical with those of the eastern hemisphere.

Philonthus,	previously described	35,	new species	50.
Actobius,	"	"	9,	"	"	14.
Cafius,	"	"	8,	"	"	2.

Regarding distribution, it is almost impossible to say anything in general, the following sketch will give an approximate idea:

	Actobius.	Cafius.	Philonthus.
Cosmopolitan species	....	..	4
Atlantic Region	10	1	25
Pacific Region	6	8	28
Canadian Region	5	..	8
Rocky Mountain Region	1	..	4
Arizona Region	...	..	5
Europe and Eastern United States	1	1	8
Northern Hemisphere	...	..	3

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One species of Actobius (*semipunctatus*) occurs in the Rocky Mountain Region and Chili.

The *Atlantic Region* includes the entire country east of the Mississippi River, including Texas.

The *Pacific Region* is all that portion of the continent bordering the Pacific Ocean west of the Sieras.

The *Canadian Region* all the country north of the St. Lawrence and the Lakes. Many of the species found here cross the continent.

The *Rocky Mountain Region* includes Colorado, western Kansas, New Mexico and Utah.

The *Arizona Region* is limited to that territory.

While these divisions are somewhat arbitrary, they give some idea of the manner of distribution of our species.

Synonymy and Bibliography.

PHILONTHUS Curtis.

A

P. aeneus Rossi Faun. Etr. 1, p. 249; Erichs. Staph. p. 437.
politus Kby. Fauna Am. Bor. p. 91.
mandibularis Kby. loc. cit. p. 92.
Harrisi Mels. Proc. Acad. 1844, p. 35.
P. furvus Nord. Symb. p. 88; Erichs. Staph. p. 434.
californicus Mann. Bull. Mosc. 1843. ii, p. 230.
comptus Hald. Stansb. Exp. p. 375.
P. sericinus n. sp. (*idem* Fauv. mss.)
P. nitescens n. sp. (*idem* Fauv. mss.)
P. alutaceus n. sp. (*idem* Fauv. mss.)
P. perversus n. sp.
P. bucephalus n. sp. (*idem* Fauv. mss.)
P. umbratilis Grav. Micr. p. 170; Erichs. Staph. p. 445.
P. laetulus Say Trans. Am. Phil. Soc. iv, p. 450; Mels. Proc. Acad. 1844, p. 36.
P. gentilis n. sp.
P. asper n. sp.
P. politus Fab. Syst. Ent. p. 266; Erichs. Staph. p. 443.
P. irinus n. sp.
P. atratus Grav. Micr. 21, 23; Erichs. Staph. p. 439.
P. semiruber n. sp. (*idem* Fv. mss.)
P. basalis n. sp.
P. cautus Erichs. Staph. p. 446.
P. hepaticus Erichs. Staph. p. 451.
f varicolor Boh. Eugen. Resa 1858, p. 29.

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B

P. gracilicornis n. sp.
P. umbrinus Grav. Micr. p. 169; Erichs. Staph. p. 464.
mœstus Grav. Mon. p. 47; Nordm. Symbol. p. 97.
boletarius Zimm. mss.
P. flavolimbatus Erichs. Staph. p. 471.
P. palliatus Grav. Mon. p. 53; Erichs. Staph. p. 474.
dispersus Fauv. mss.
P. pubes n. sp. (*idem* Fv. mss.)
P. grandicollis n. sp. (*idem* Fv. mss.)
P. puberulus n. sp. (*idem* Fv. mss.)
P. quadricollis n. sp.
P. Theveneti n. sp. (*idem* Fv. mss.)
P. debilis Grav. Micr. p. 35; Erichs. Staph. p. 472.
P. varians Payk. Mon. Staph. p. 45; Erichs. Staph. p. 470.
agilis Grav. Mon. p. 77.
niger Mels. Proc. Acad. 1844, p. 38.
P. longicornis Steph. Ill. Brit. Ent. v. p. 237; Fauvel, Faune Gall. Rhen. ii. p. 480.
scybalarius Nordm. Symbol. p. 94.
promptus Erichs. Staph. p. 929.
P. discoideus Grav. Micr. p. 38; Erichs. Staph. p. 474.
ruficornis Mels. Proc. Acad. 1844, p. 38.
P. thermarum Aubé Ann. Ent. Soc. Fr. 1850, p. 316; Fauvel Faune Gall. Rhen iii, p. 470.

C

P. alumnus Erichs. Staph. p. 490.
rufulus Fv. mss.
atriceps Fv. mss. (in cab. Horn.)
P. innocuus n. sp.
P. thoracicus Grav. Micr. p. 170; Erichs. Staph. p. 481.
P. fusiformis Mels. Proc. Acad. 1844, p. 38.
P. fulvipes Fab. Ent. Syst. i, 2, p. 526; Erichs. Staph. p. 485.
Horni Fv. mss.
P. occidentalis n. sp.
P. Schwarzi n. sp.
P. hudsonicus n. sp.
P. Pettiti n. sp. (*idem* Fv. mss.)
P. triangulum n. sp. (*idem* Fv. mss.)
P. ferreipennis n. sp. (*idem* Fv. mss.)
P. caurinus n. sp.
P. Crotchi n. sp. (*idem* Fv. mss.)
P. arizonensis n. sp.
P. micans Grav. Micr. p. 25; Erichs. Staph. p. 484.
P. lomatus Erichs. Staph. p. 482.
georgianus Sachse Stett. Zeit. 1852, p. 143.
viperinus Fv. mss.
P. cunctans n. sp.
P. æqualis n. sp.

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P. brunneus Grav. Micr. p. 172; Erichs. Staph. p. 486.
sericans Grav. Micr. p. 171.
dimidiatus Say Trans. Am. Philos. Soc. iv, p. 450.
brevis Mels. Proc. Acad. 1844, p. 37.

D

P. cyanipennis Fab. Ent. Syst. i, p. 525; Erichs. Staph. p. 433.
cæruleipennis Mann. Brachel. p. 27.
P. blandus Grav. Mon. p. 72; Erichs. Staph. p. 458.
pulchellus Mels. Proc. Acad. 1844, p. 36.
pæderinus Sachse Stett. Zeit. 1852, p. 126.
P. quediinus n. sp.
P. sordidus Grav. Micr. p. 176; Erichs. Staph. p. 456.
P. cephalotes Grav. Micr. p. 22; Erichs. Staph. p. 455.
P. filicornis n. sp. (*idem* Fv. mss.)
P. inquietus Erichs. Staph. p. 928.
P. versutus n. sp.
P. ventralis Grav. Micr. p. 174; Erichs. Staph. p. 473.
anthrax Grav. Micr. p. 176.
P. distans n. sp. (*idem* Fv. mss.)
P. fallaciosus n. sp. (*idem* Fv. mss.)
P. inversus n. sp.
P. brevipennis n. sp.
P. Siegwaldi Mann. Bull. Mosc. 1843, ii, p. 230.
P. crassulus n. sp. (*idem* Fv. mss.)
P. parvus n. sp.
P. clunalis n. sp.
P. bidentatus n. sp.
P. virilis n. sp.
P. punctatellus n. sp.
P. nigritulus Grav. Micr. p. 41.
aterrimus Grav. Micr. p. 41; Erichs. Staph. p. 492.
picipennis Mäkl. Bull. Mosc. 1852, ii, p. 313.
pumilus Mann. Brachel. p. 32.
P. microphthalmus n. sp. (*idem* Fv. mss.)
P. decipiens n. sp. (*idem* Fv. mss.)
P. albionicus Mann. Bull. Mosc. 1843, ii, p. 231.
P. instabilis n. sp.
P. picicornis n. sp. (*idem* Fv. mss.)

E

P. serpentinus n. sp.
P. baltimorensis Grav. Micr. p. 163; Erichs. Staph. p. 503.
P. apicalis Say Trans. Am. Phil. Soc. iv, p. 451.
hæmaturus Erichs. Staph. p. 504.
P. quadrulus n. sp.
P. viridanus n. sp. (*idem* Fv. mss.)
P. confertus Lec. New Species 1863, p. 40.
P. Lecontei n. sp. (*idem* Fv. mss.)
P. aurulentus n. sp. (*idem* Fv. mss.)

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ACTOBIUS Fauv.

A. cinerascens Grav. Micr. p. 49; Erichs. Staph. p. 509.
A. nanus n. sp.
A. inutilis n. sp.
A. fraterculus n. sp. (*idem* Fauv. mss.)
A. senilis n. sp. (*idem* Fauv. mss.)
A. infimus n. sp.
A. semipunctatus Fairm. et Germ. (*Othius*) Ann. Fr. 1861, p. 434.
A. coreatus n. sp.
A. sobrinus Erichs. Staph. p. 512.
A. agnatus Erichs. Staph. p. 513.
A. patella n. sp.
A. loxatus n. sp. (*idem* Fauv. mss.)
A. punoticeps n. sp.
A. pusio n. sp.
A. parcus n. sp.
A. gratus Lec. New Species 1863, p. 38.
A. pæderoides Lec. loc. cit.
A. jocosus n. sp.
A. jucundus n. sp.
A. elegantulus n. sp.
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C. seminitens n. sp. (*idem* Fv. mss.)
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OF THE

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PHILADELPHIA:
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No. 55 North Seventh Street.
1884.

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Revised Catalogue of the DIURNAL LEPIDOPTERA of America North of Mexico.

BY W. H. EDWARDS.

The Catalogue of the Diurnal Lepidoptera of America north of Mexico was published in 1877, and so much new material has since then accumulated,—descriptions of species, or of preparatory stages, or relation of habits, or mention of localities, that a Revision has seemed urgent. In preparing the present edition I have greatly enlarged the references, and have added an Index of species. I have followed the rules which were set forth in the Advertisement of the Catalogue, dropping all species which I believe to have been improperly credited to this fauna, crediting the genus names to the authors who first defined them, and in the general arrangement, while adopting the families and sub-families of some of the later systematists, adhering mainly to the order of Doubleday and his associates in the "Genera of Diurnal Lepidoptera." In the Hesperidæ I have followed Dr. Adolph Speyer, as in the Catalogue. Since 1877 this author has still further investigated the same family, and so far as concerns the American species, I have availed myself of most of his conclusions.

Nearly every North American species of Butterfly is represented in my collection, but where any are wanting I have in most cases been able to examine them elsewhere. With this aid I have carefully gone over the entire list of species, and their standing is given herein according to my best judgment. W. H. EDWARDS.

Coalburgh, W. Va., May 15, 1884.

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Signs used.—♂, male; ♀, female.
* mention of preparatory stages, or habits of butterfly.
† species unknown to me, and perhaps not properly classified.
The heavy lines indicate sub-groups.
Aberr.—Aberration, sport.
Auct.—On authority of.
Coll.—Collection of.
By.—Taken by.
Dim.—Dimorphic.

NAMES OF STATES, ETC.

Antic.—Anticosti.
Ark.—Arkansas.
Ariz.—Arizona.
Atl.—Atlantic.
Br. Am.—British America.
Br. Col.—British Columbia.
Cala.—California.
Col.—Colorado.
Conn.—Connecticut.
Dak.—Dakota.
Ga.—Georgia.
Gulf. St.—Gulf States.
Ia.—Iowa.
Ill.—Illinois.
Ind.—Indiana.
Ind. Terr.—Indian Territory.
Kans.—Kansas.
Ky.—Kentucky.
Labr.—Labrador.
L. I.—Long Island.
Mass.—Massachusetts.
Md.—Maryland.
Me.—Maine.
Mex.—Mexico.
Mich.—Michigan.
Minn.—Minnesota.
Miss.—Mississippi.
Mo.—Missouri.
Mont.—Montana.
N. B.—New Brunswick.
N. C.—North Carolina.
N. E.—New England.
Neb.—Nebraska.
N. F'land.—Newfoundland.
Nev.—Nevada.
N. H.—New Hampshire.
N. J.—New Jersey.
N. Mex.—New Mexico.
N. Sco.—Nova Scotia.
N. Y.—New York.
Ont.—Ontario.
Oreg.—Oregon.
Pa.—Pennsylvania.
Pac.—Pacific.
Queb.—Quebec.
San Berno.—San Bernardino.
Saskatch.—Saskatchawan.
St.—States.
Tenn.—Tennessee.
U. S.—United States.
Va.—Virginia.
Vanc. Isld.—Vancouver's Island.
W. Ind.—West Indies.
Wis.—Wisconsin.
W. Terr.—Washington Territory.
W. Va.—West Virginia.

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CATALOGUE.

PAPILIONIDÆ.

PAPILIONINÆ.

PAPILIO, Linnaeus.

Group I.

1. **Ajax,** Linn., Syst. Nat., 1, 2, 750, 1767; Grub., Jen. Zeitschr. Nat., 17, 473, pl. 7, figs. 16–19, 1884 *.

Winter form WALSHII, Edw., But., 1, 1, pl. 1, 1871 *.

Marcellus, Cram., 2, pl. 98, figs. F. G. 1779.

var. ABBOTII, Edw., l. c., pl. 1, fig. 6, 1871; Mundt, Can. Ent., 15, 87, 1883.

Ajax, Sm.-Abb., pl. 4, 1797.

Winter form TELAMONIDES, Feld., Reise Nov., Lep., 1, 60, 1865, id., Sp. Lep., 59, 1864; Edw., But., 1, 5, pl. 2, 1871 *.

Ajax, Bd.-Lec., pl. 1, 1833.

Summer form MARCELLUS, Bd., 8, pl. 2, 1833; Edw., But., 1, 7, pl. 3, 1871 *.

Ajax, Esp., Eur. Schmett., 1, pl. 51, 1780. (For experiments upon the effect of cold applied to chrysalids of the forms of *Ajax*, see Edw., Can. Ent., 7, 236, 1875; also Psyche, 3, pp. 3 and 17, 1880).

Hab.—Pa. to Texas; Miss. Valley; occasl. Hamilton, Ont. (by Moffat.)

Group II.

2. **Philenor,** Linn., Mant., 535, 1771; Sm.-Abb., pl. 3, 1797 *; Say, Am. Ent., 1, pl. 1, 1824; Bd.-Lec., 29, pl. 11, 1833 *; Bd., Sp. Gen., 1, 324, 1836; Riley, 3d Mo. Ent. Rep., 116, 1870 *; H. Edw., Pr. Cal. Ac. N. Sci., 161, 1873 *; Edw., Can. Ent., 13, 9, 1881 *; Grub., Jen. Zeitschr. Nat., 17, 474, pl. 7, figs. 20–42, 1884 *.

Astinous, Dru., 1, pl. 11, 1773; Cram., 3, 208, figs. A. B. 1872.

Hab.—U. S. generally; Ont.

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Group III.

3. **Machaon,** var. ALIASKA, Scud., Pr. Bost. Soc. N. H., 12, 45, 1869; Edw., Can. Ent., 13, 63, 1881; id., Papilio, 2, 74, 1882; 3, 50, 1883; id., But., 2, pl. 14, 1884 *.
   Hab.—Oreg.; Br. Am.; Alaska.

4. **Oregonia,** Edw., But., 2, pl. 7, 1880, l. c., 2, pl. 14, 1884 *; Hagen, Papilio, 2, 152, et seq. 1882; id., Pr. Bost. Soc. N. H., 22, 105, 1882; Edw., Papilio, 3, 45, et. seq. 1883.
   Hippocrates var. *Oregonia*, Edw., Tr. A. E. Soc., 5, 208, 1876.
   Hab.—Oreg.; W. Terr.; Vanc. Island.

5. **Zolicaon,** Bd., Ann. Soc. Ent. Fr., 2, 10, 281, 1852; Edw., But., 2, pl. 6, 1875 *; id., l. c., 2, pl. 14, 1884 *; H. Edw., Pr. Cal. Ac. N. Sci., 5, 163, 1873 *; Str., Lep., pl. 6, fig. 3, ♀, 1873; Hag., Papilio, 2, 152, et seq. 1882; id., Pr. Bost. Soc. N. H., 22, 105, et seq. 1882; Edw., Papilio, 3, 45, et seq. 1883.
   Hab.—Oreg. to Ariz.; Mont.; Col.

6. **Americus,** Koll., Denkschr. Ak. Wiss. Wien, Math. Nat. Cl., 1, 354, 1850; Edw., Papilio, 3, 55, 1883.
   Sadalus, Luc., Rev. Zoöl., 1852, 133, pl. 10.
   Hab.—Ariz.

7. **Nitra,** Edw., Papilio, 3, 162, 1883.
   Hab.—Mont.

8. **Indra,** Reak., Pr. E. Soc. Phil., 6, 123, 1866; Edw., But., 2, pl. 9, 1878; Str., Lep., pl. 2, fig. 1, ♂, 1873; Putn., Pr. Dav. Ac. N. Sci., 1, pl. 35, ♀, 1876.
   Hab.—Col.; Nev.; Cala.

9. **Pergamus,** H. Edw, Pr. Cal. Ac. N. Sci., 5, 423, 1874.
   Hab.—So. Cala.

10. **Brevicauda,** Saund., in Packard's Guide, 245, 1869; Edw., But., 2, pl 8, 1875, pl. 8 B, 1880 *.
    Anticostiensis, Str., Lep., pl. 2, fig. 2, ♀, 1873.
    Hab.—N. F'land.; Antic.; Labr.; Queb.

11. **Bairdii,** Edw., ♂, Pr. E. Soc. Phil., 6, 200, 1869; Mead, Rep. Wheeler Exp., 5, 740, 1875; Edw., ♀, Can. Ent., XI, 83, 1879; id., But., 2, pl. 10, 1880.
    Asterias, var. *Utahensis*, Str., Cat., p. 72, 1878.
    Hab.—Ariz.

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12. **Asterias,** Fab., Mant., 2, 1787; Bd.-Lec., 14, pl. 4, 1833 *; Bd., Sp. Gen., 1, 332, 1836; Harr., 263, pl. 4, 1862 *; Lintn., Pr. E. Soc. Phil., 3, 51, 1864 *; H. Edw., Pr. Cal. Ac. N. Sci., 164, 1873 *; Edw., But, 2, pl. 14, 1884 *; Grub., Jen. Zeitschr. Nat., 17, 467, pl. 7, figs. 1–5, 1884 *; Fern. But. Me., 21, 1884 *; bi-form, Edw., But., 2, pl. 11.

aberr. CALVERLEYII, Gro., Pr. E. Soc. Phil., 2, 441, pl. 10, ♂, 1864; Mead, Am. Nat., 3, 332, ♀, 1869; Edw., l. c., 2, pl. 11, ♂ ♀, 1877.

var. ASTEROIDES, Reak., (not Str.) Pr. Ac. N. Sci. Phil., 43, 1866.

Troilus, Sm.-Abb., pl. 1, 1797.

Hab.—Atl. to Pac.; U. S. generally; Ont.; Queb.

Group IV.

13. **Troilus,** Linn., Mus. Lud. Ulr., 187, 1764; Bd.-Lec., 26, pl. 10, 1833 *; Bd. Sp. Gen., 1, 334, 1836; Harr., 266, 1862 *; Saund., Can. Ent., 1, 73, 1869 *; Grub., Jen. Zeitschr. Nat., 17, 471, pl. 7, figs. 12–15, 1884 *.

Ilioneus, Sm.-Abb., pl. 2, 1797; Feld., Verh. Zool. Bot. Ges., 14, 315, 364, 1864; id., Sp. Lep., 76, 1864.

Hab.—Atl., Southn., Westn. States.

14. **Palamedes,** Dru., 1, 19, 1773; Cram., 1, 93, fig. A. B., 1779; *Calchas*, Fab., Syst. Ent., 453, 1775; Bd.-Lec., 17, pl. 5, 1833 *; id., Spec. Gen., 1, 373, 1836; Edw., Can. Ent., 13, 119, 1881 *.

Hab.—Gulf States; Fla. to Va.

Group V.

15. **Turnus,** Linn., Mant., 536, 1771; Say, Am. Ent., pl. 40, 1828; Bd.-Lec., 19, pl. 6, 7, 1833 *; Harr., 268, figs. 97, 98, 1862 *; Saund., Can. Ent., 1, 74, 1869; 6, 2, 1874 *; Edw., But., 2, pl. 3, 4, 5, 1877 *; Grub., Jen. Zeitschr. Nat., 17, 470, pl. 7, figs. 7–11, 1884 *; Fern., But. Me., 23, 1884 *.

Hab.—Atl. St.; Miss. Valley to Texas; Queb.; Ont.; N. F'land.; Br. Am.; Alaska.

dim. form, ♀, GLAUCUS, Linn., Mus. Lud. Ulr., 190, 1764; Bd.-Lec., pl. 8, 9, 1833; Rid., Pr. E. Soc Phil., 1, 266, 1862; Walsh, l. c., 1, 349, 1862; Edw., But., 2, pl. 3, 4, 1877; bi-form, Edw., l. c., pl. 5, cit.; interm. form, id., pl. 5, cit.

Hab.—New York and South and West; Fort Mcleod, Br. Am. (auct. Geddes.)

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16. **Eurymedon,** Bd., Ann. Soc. Ent. Fr., 2, 10, 280, 1852; Scud., Pr. Bost. Soc. N. Hist., 13, 1870 *; Edw., But., 2, pl. 1, 1874 *; H. Edw., Pr. Cal. Ac. N. Sci., 5, 164, 1873 *; Str., Lep., pl. 4, fig. 1, ♂, 1873; Mead, Psyche, 2, 180, 1878 *.

var. ALBANUS, Feld., Reise Nov. Lep., 1, 93, 1865; H. Edw., Papilio, 2, 122, 1882.

Hab.—Cala. to Br. Col.; Ariz. to Mont.; Br. Am. (auct. Geddes.)

17. **Rutulus,** Bd., Ann. Soc. Ent. Fr., 2, 10, 279, 1852; H. Edw.' Pr. Cal. Ac. N. Sci., 5, 165, 1873 *; id., Papilio, 2, 112, 1882 *; Mead, Psyche 2, 180, 1878 *; Hagen, Papilio, 2, 160, 1882; Edw., Papilio, 3, 2, 1883; id., But., 2, text, pl. 12, 13, 1884 *.

Hab.—Pac. States; Br. Col.; Col. to Mont.

var. ARIZONENSIS, Edw., Papilio, 3, 4, 1883; id., But., 2, pl. 13, 1884.

Hab.—Ariz.; N. Mex.; Col.

18. **Daunus,** Bd., Sp. Gen., 1, 342, 1836; Rid., Pr. E. Soc. Phil., 1, 278, fig. 2. 1862; Edw., But., 2, pl. 2, 1874; H. Edw., Pr. Cal. Ac. N. Sci., 5, 325. 1873 *; Mead, Rep. Wheeler Exp., 5, 741, 1875; Str., Lep., pl. 6, figs. 1, 2, 1873; Edw., Papilio, 3, 2, 1883 *.

Hab.—Ariz. to Mont.; Utah; Nev.; Oreg.; Mex.

19. **Pilumnus,** Bd., Sp. Gen., 1, 340, 1836; Mén., Cat. Mus. Petr., 2, 110, pl. 7, fig. 2, 1857; Str., Lep., pl. 2, fig. 3, ♂, 1873.

Hab.—Ariz.: Mex.

Group VI.

20 **Cresphontes,** Cram., 2, 165 A, 166 B, 1779.

Thoas, var. *Cresphontes*, Bd., Sp. Gen., 1, 355, 1836; *Thoas*, Bd.-Lec., 31, pl. 12, 13, 1833 *; Saund., Can. Ent., 10, 48, 1878 *; Boll., l. c., 10, 154, 1878 *; French, l. c., 13, 177, 1881 *; Ashm., Orange Ins., 47, 1880 *; Mundt, Papilio, 3, 25, 1883.

Hab.—Southn and Westn St.; is moving east and north; Ohio; W. Va.; Mich.; N. Y.; Conn.; Ont.; Queb.; St. Johns, N. B.

21. **Thoas,** Linn., Mant., 536, 1771; Dru., 1, pl. 22, 1773; Cram., 2, 167, figs. A. B., 1779; Bd., Sp. Gen., 1, 355, 1836.

Hab.—So. Ariz. (by Morrison); S. W. Texas (in coll. Aaron); Mex.

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Group VII.

22. **Polydamas,** Linn., Mus. Lud Ulr., 192, 1764; Dru., 1, 17, 1773; Cram., 3, 211, figs. D. E., 1782; Bd. Spec. Gen., 1, 321, 1836; Bd.-Lec., 37, pl. 15, 1833; Morr., 4, 1862.

Hab.—Indian River, Fla. (by Wittfeld); Cuba; Mex.

PARNASSIUS, Latreille.

23. **Clodius,** Mén., Cat. Mus. Petr., 1, 73, 1855; Edw., But., 1, 18, pl. 4, figs. 5, 6 ♂, 1871; H. Edw., Pr. Cal. Ac. N. Sci., 6, 1876.

Clarius, Bd. (not Eversm.), Ann. Soc. Ent. Fr., 2, 10, 283, 1852; Edw., l. c., 1, 17, pl. 1, figs 1–4, 1871.

Baldur, Edw., Cat. Lep., 12, 1877; Mead, Psyche, 2, 180, 1878.

Hab.—Cala.; Utah; Nev.; Mont.

var. MÉNÉTRIÉSII, H. Edw., Pr. Cal. Ac. N. Sci., 6, 1876.

Hab.—Sier. Nev.; Lake Tahoe; Mt. Nebo, Utah.

24. **Smintheus,** Doubl.-Hew., Gen. Di. Lep., pl. 4, 1847; Edw., But., 1, 21, pl. 5, 6, 7, 1872 ✳.

Sayii, ♀, Edw., Pr. E. Soc. Phil., 2, 78, 1863; id., But., 1, pl. 5, fig. 2, 1872; Mead, Rep. Wheeler Exp., 7, 742, 1875; Behrens, Papilio, 2, 50, 1882.

Hab.—Rocky Mts., Col. to Mont.; N. Mex.; Mt. Bradley, Cala.

var. BEHRII, Edw., Tr. A. E. Soc., 3, 10, 1870; id., But., 1, pl. 6, fig. 3 ♂ 4 ♀, 1872; Mead, Psyche, 2, 181, 1878 ✳.

Hab.—Nev.; Utah.

var. HERMODUR, H. Edw., Papilio, 1, 4, 1881; Edw., Papilio, 3, 158, 1883.

Hab.—Col.; Mont.; Br. Am.

25. † **Nomion,** Fisch., Ent. Russ., 2, 242, pl. 6, 1823; Bd. Sp. Gen., 1, 397, pl. 2, 1836.

Hab.—Alaska. (coll. Behr.)

26. **Eversmanni,** Mén., Cat. Mus. Petr., 1, 73, pl. 1, figs. 1, 2 ♂, 1855; Scud., Pr. Bost. Soc. N. Hist., 12, 45, 1869; Edw., But., 1, 27, pl. 7, figs. 6, 7, ♂, 1872.

♀ *Wosnesenski,* Mén., l. c., pl. 1, fig. 3, 1855.

var. ♀, THOR. H. Edw., Papilio, 1, 4, 1881; id., l. c., 2, 148, 1882.

Hab.—Alaska; Siberia.

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PIERINÆ.

NEOPHASIA, Behr.

27. **Menapia,** Feld., Wien. Ent. Monat., 3, 271, 1859; id., Reise Nov. Lep., 181, pl. 25, 1865; Edw., But., 1, 27, pl. 8, 1871; id., ♀, l. c., Supp. Notes, 1872; Str., Lep., pl. 2, fig. 4, ♀, 1873; H. Edw., Pr. Cal. Ac. N. Sci., 5, 165, 1873 *; Mead, Rep. Wheeler Exp., 5, 743, 1875; Stretch, Papilio, 2, 103, 1882 *; Hag., Pr. Bost. Soc. N. Hist., 22, 134, 1882.

Tau, Scud., Pr. Bost. Soc. N. Hist., 3, 183, 1861.

Ninonia, Bd. Lep. de la Cala., 38, 1869.

var. SUFFUSA, Stretch, Papilio, 2, 110, pl. 2, 1882.

Hab.—Cala.; Oreg.; W. Terr.; Vanc. Isld.; Col.

PIERIS, Schrank.

Group I.

28. **Amaryllis,** Fab., Ent. Syst., 3, 1, 189, 1797; Don., Ins. Ind., pl. 28, 1800.

Josephina, Godt., Enc. Meth., 9, 158, 1819; Bd., Spec. Gen., 1, 532, 1836.

Hab.—So. Texas; Mex.

Group II.

29. **Ilaire,** Godt., Enc. Meth., 9, 142, 1819; Poey, Cent. Lep. Cuba, pl. 19, 1833; Bd., Spec. Gen., 1, 491, 1836.

Hab.– Indian River, Fla.; Texas; Ariz. (by Morrison)

Group III.

30. **Monuste,** Linn., Mus. Lud. Ulr., 237, 1764; Bd., Sp. Gen., 1, 495, 1836; Morr., 4, 1862; Riley, U. S. Agr. Rep., 1883, 117, pl. 10 *.

Monusta, Cram., 2, pl. 141, fig. F, 1779.

Cleomes, Bd.-Lec., 43, pl. 16, 1883 *.

Hab.—Southn. St.; Texas.

Group IV.

31. **Beckerii,** Edw., But., 1, 30, pl. 8, 1871; id., l. c., 2, pl. 1 of Pieris, 1883 *; Mead, Rep. Wheeler Exp., 5, 745, 1875; id., Psyche, 2, 183, 1878 *; Hag., Pr. Bost. Soc. N. H., 22, 139, 1882.

Hab.—Nev.; Utah; Cala.; Oreg.; W. Terr.; Col.; Ariz.

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32. **Sisymbri,** Bd., Ann. Soc. Ent. Fr., 2, 10, 284, 1852; Mead, Psyche, 2, 184, 1878 *; Edw., But., 2, pl. 1 of Pieris, 1883 *.
Hab.—Cala.; Nev.; Col.; Ariz.

Group V.

33. **Nelsoni,** Edw., But., 2, pl. 1 of Pieris, 1883.
Hab.—St. Michael's, Alaska.

34. **Occidentalis,** Reak.
winter form CALYCE, Edw., Tr. A. E. Soc., 3, 189, 1870.
Leucodice, Bd., (not Eversm.) Ann. Soc. Ent. Fr., 2, 10, 284, 1852.
summer form OCCIDENTALIS, Reak., Pr. E. Soc., Phil., 6, 133, 1866; Mead, Psyche, 2, 184, 1878.
Hab.—Rocky Mts. to Pac.; Cala. to Oreg.; Br. Am.

35. **Protodice,** Bd.-Lec.
winter form VERNALIS, Edw., Pr. E. Soc. Phil., 2, 501, 1864; id., But., 1, 33, pl. 9, 1871; Bean, Can. Ent., 9, 201, 1877 *.
summer form PROTODICE, Bd.-Lec., 45, pl. 17, 1833; Riley, second Mo. Ent. Rep., 104, 1870 *; id., U. S. Agr. Rep., 1883, 114, pl. 10 *.
Nasturtii, Edw. (not Boisd.), Pr. E. Soc. Phil., 501, 1864.
Hab.—Mid., South., Westn. St. to Pac.; Br. Am.

Group VI.

36. **Napi,** Esper.
Arctic form BRYONIÆ, Ochs., Eur. Schmett., 1, 2, 151, 1808; Edw., Papilio, 1, 86, pl. 2, fig. 4, 1881.
Hab.—Alaska.

var. HULDA, Edw., Tr. A. E. Soc., 2, 370, 1869; id., Papilio, 1, pl. 2, fig. 5.
Hab.—Kodiak, Alaska.

1. winter form VENOSA, Scud., Pr. Bost. Soc. N. Hist., 8, 182, 1861; Edw., Papilio, 1, pl. 2, fig. 6; Str., Lep. pl. 8, fig. 2, 3, 1874.
Hab.—Cala. to Br. Col.

aberr. FLAVA, Edw., l. c., 98, 1881.
Hab.—Cala.

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2. winter form OLERACEA-HIEMALIS, Harr., N. E. Farm., 8, 402, 1829; id., in Agas. L. Supr., 386, 1850 *; Edw., l. c., pl. 2, fig. 8; Riley, U. S. Agr. Rep., 1883, 108, pl. 1 *.

var. BOREALIS, Gro., Buff. Bull., 1, 185, 1873; Edw., l. c., pl. 2, fig. 9.

Hab.—Labr.; Antici.

var. FRIGIDA, Scud., l. c., 8, 181, 1861.

Hab.—Boreal Am.

aberr. VIRGINIENSIS, Edw., Tr. A. E. Soc., 3, 13, 1870; id., But., 1, 34, pl. 9, 1871.

Hab.—N. Y.; Ont.

3. 1. summer form ACADICA, Edw., Papilio, 1, 87, pl. 3, fig. 10, 11, 1881.

Hab—N. F'land.

2. summer form, *a.* PALLIDA, Scud., l. c., 183, 1861; Str., Lep., 8, fig. 5 ♀; Edw., l. c., pl. 3, fig. 12, 13.

Nasturtii, Bd., Lep. de la Cala., 38, 1869.

Hab.—Cala. to Br. Col.

b. CASTORIA, Reak. ♂, Pr. Ac. N. Sci. Phil., 1866, 31; Str., Lep., 8, fig. 4, 1874; Edw., l. c., pl. 3, fig. 14, 1881.

Resedæ, Bd., Lep. de la Cala., 39, 1869.

Hab.—Cala. to Br. Col.

aberr. FLAVA, Edw., l. c., 94, 1881.

Hab.—Cala.

3. summer form OLERACEA-ÆSTIVA, Harr., in Agas. L. Supr., 386, pl. 7, fig. 1, ♀, 1850; id., Ins. Mass., 270, fig. 99; Edw., l. c., pl. 3, fig. 15, 16; Fern., But. Me., 25, 1884 *.

Casta, Kirby, Faun. Bor. Am., 4, pl. 3, fig. 1, 1837.

Cruciferarum, Bd., Sp. Gen., 1, 519, ♂, 1836.

Hab.—N. E. to Mich.; Ont.; Queb.

37. **Virginiensis**, Edw., Tr. A. E. Soc., 3, 13, 1870; id., But., 1, 34, pl. 9, 1871; id., Papilio, 1, 95, pl. 3, fig. 17, 18, 1881.

Hab.—W. Va.

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38. **Rapæ,** Linn., Syst. Nat., 759, 1767; Riley, second Mo. Ent. Rep., 1870 *; id., U. S. Agr. Rep., 1883, 108, pl. 1 *; Fern. But. Me., 27, 1884 *.

var. MARGINALIS, Scud., Pr. Bost. Soc. N. Hist., 8, 182, 1861.
Rapæ, Str., Lep., 8, fig. 6, 1874.

var. YREKA, Reak., Proc. Ac. N. Sci. Phil., 1866, 32.
Resedæ, Bd., Lep. de la Cala., 39, 1869.
Rapæ, Str., Lep., 8, fig. 7, 1874.

Hab.—N. E. to Rocky Mts.; Br. Am. to Pacific; N. Sco.

var. MANNI, Mayer; Stet. Ent. Zeit., 1851, p. 151.

Hab.—Ga.

var. NOV.-ANGLIÆ, Scud., Can. Ent., 4, 79, 1872; Str., Lep., 8, fig. 8.

Hab.—East. St.

NATHALIS, Boisduval.

39. **Iole,** Bd., Sp. Gen., 1, 589, 1836; Mead, Rep. Wheeler Exp., 5, 747, 1875.

var. IRENE, Fitch, Tr. N. Y. St. Ag. Soc., 485, 1856.

Hab.—Ill.; Mo. to Cala.; N. Mex.; Ariz.

ANTHOCHARIS, Boisduval.

Group I.

40. **Lanceolata,** Bd., Ann. Soc. Ent. Fr., 2, 10, 284, 1852; Morr., 4, 1862; Str., Lep., pl. 6, fig. 5, 1873; Mead, Psyche, 2, 183, 1878 *.

Edwardsii, Behr., Tr. A. E. Soc., 2, 304, 1869.

Hab.—Cala.; Nev.; Ariz.

Group II.

41. **Creusa,** Doubl.-Hew., Gen. Di. Lep., pl. 7, 1847.

Hab.—So. Cala.; Ariz.; Utah.

42. **Hyantis,** Edw., Tr. A. E. Soc., 3, 205, 1871; H. Edw., Pr. Cal. Ac. N. Sci., 1878; Mead, Psyche, 2, 183, 1878 *.

Hab.—Col.; Cala.; Ariz.

43. **Olympia,** Edw., l. c., 3. 266, 1871; id., But., 2, pl. 1 of Anth., 1874.

Hab.—W. Va.; Ind.; Neb.

44. **Rosa,** Edw., Papilio, 2, 45, 1882.

Hab.—West Texas.

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45. **Ausonides,** Bd., Ann. Soc. Fr., 2, 10, 286, 1852; Edw., But., 2, pl. 1 of Anth., 1874; Mead, Rep. Wheeler Exp., 1, 747, 1875 ⁎.

var. COLORADENSIS, H. Edw., Papilio, 1, 1881.

Hab.—Col. to Cala.; Ariz.; Br. Am.; Youcon River, Alaska.

Group III.

46. **Cethura,** Feld., Reise Nov. Lep., 2, 182, pl. 25, 1865.

Cooperi, Behr., Tr. A. E. Soc., 2, 304, 1869; Edw., But., 1, 38, pl. 10, 1870.

Angelina, Bd., Lep. de la Cala., 40, 1869.

Hab.—So. Cala.

47. **Morrisoni,** Edw., Papilio, 1, 43, 1881.

Hab.—Kern River, Cala.

48. **Thoosa,** Scud., ♀, Hayden Bull., 4, 257, 1878; Edw., ♂, ♀, Can. Ent., 11, 87, 1879.

Hab.—Utah; Ariz.

49. **Sara,** Bd., Ann. Soc. Ent. Fr., 2, 10, 285, 1852; Edw., But., 1, 39, pl. 11, 1871.

Hab.—Cala.

50. **Reakirtii,** Edw., Tr. A. E. Soc., 2, 369, 1869; id., But., 1, 37, pl. 10, 1870.

Hab.—Cala.

51. **Stella,** Edw., Can. Ent., 11, 87, 1879.

Hab.—Nev.; Cala.; Oreg.; Ariz.

52. **Julia,** Edw., Tr. A. E. Soc., 4, 61, 1872; id., But., 2, pl. 2 of Anth., 1878; Str., Lep., pl. 6, figs. 6, 7, 1873.

Hab.—Col.; N. Mex.; Ariz.; Mont.

53. **Genutia,** Fab., Ent. Syst., 3, 193, 1793; Bd., Sp. Gen., 1, 565, 1836; Edw., l. c., 2, pl. 2 of Anth., 1878.

Hab.—N. Y. to Va.; West. St.; Texas.

CALLIDRYAS, Boisduval.

Group I.

54. **Eubule,** Linn., Syst. Nat., 2, 743, 1766; Sm.-Abb., pl. 5, 1797 ⁎; Bd.-Lec., 74, pl. 24, 1833 ⁎; Butl., Lep. Ex., 58, pl. 22 1874; Edw., Tr. A. E. Soc., 9, 12, 1881.

Hab.—So. St. to W. Va. and Ohio; Ill.; Iowa; Ariz.; So. Cala.; occasl. N. Y.; also R. I. (auct. Clark)

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55. **Sennæ,** Linn., Syst. Nat., 2, 764, 1766; Butl., l. c., 59, pl. 23, 1874; Edw., l. c., 9, 11, 1881.
♂ *Marcellina*, Cram., 2, 163, figs. A, C, 1779.
♀ *Eubule*, Cram., 2, 120, figs. E, F, 1779.
var. ♀ ORBIS, Poey, Cent. Lep. Cuba, pl. 1, 1832.
Hab.—Indian River, Fla.; Texas; Ariz.

Group II.

56. **Philea,** Linn., Syst. Nat., 2, 764, 1766; Butl., l. c., 92, pl. 35, 1874; Edw., l. c., 9, 13, 1881.
Hab.—Occasl. Texas; also Ill. (see Am. Ent., 2, 340); also near Racine, Wis. (auct. Hoy, see Papilio 4, 113)

57. **Agarithe,** Bd., Sp. Gen., 1, 623, 1836; Butl., l. c., 121, pl. 45, 1874; Edw., l. c., 9, 13, 1881.
Hab.—Fla.; Texas; Kans.; Ariz.; occasl. Neb.

KRICOGONIA, Reakirt.

58. **Lyside,** Godt.
1. winter form LYSIDE, Godt., Enc. Meth., 9, 98, 1819; Bd., Sp. Gen., 1, 603, 1836.
2. summer form TERISSA, Luc., Rev. Zoöl., 1852, 429.
Hab.—Texas; Indian River, Fla.

59. **Fantasia,** Butl., Tr. Ent. Soc., Lond., 1871, p. 170, pl. 7, fig. 6.
Hab.—Texas.

60. † **Lanice,** Lint. MSS.
Hab.—Rio Grande, Texas.

COLIAS, Fabricius.

Group I.

61. **Eurydice,** Bd., Ann. Soc. Ent. Fr., 3, 32, 1855; Edw., But., 1, 53, pl. 16, 1870; H. Edw., Pr. Cal. Ac. N. Sci., 6, 1876 ∗; Edw., Can. Ent., 15, 224, 1883 ∗.
Wosnesenski, Mén., Cat. Mus. Petr., 1, 77, pl. 1, 1855.
♀ *Rhodocera Lorquini*, Bd., l. c., 3, 52, 1855.
dim. form AMORPHÆ, H. Edw., Pr. Cal. Ac. N. Sci., 6, 1876.
Hab.—Cala.; Ariz.; Oreg.

62. **Cæsonia,** Stoll, Suppl. Cram., pl. 41, figs. 2, 2 B, 1790; Bd.-Lec., 67, pl. 22, 1833 ∗; Bd., Sp. Gen., 1, 635, 1836; Morr., 27, 1862.
Hab.—So. States; Miss. Valley; Texas to Cala.; occasl. Minn.

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Group II.

63. **Meadii,** Edw., Tr. A. E. Soc., 3, 267, 1871; id., But., 1, 60, pl. 19, 1872; Mead, Rep. Wheeler Exp., 5, 750, 1875.
Hab.—Col.; Mont.; N. Mex. (Alpine)

64. **Hecla,** Lef., Ann. Soc. Ent. Fr., 5, 383, pl. 9, 1836.
Hab.—Arctic, Greenland to Behring's Straits.

var. GLACIALIS, McLachl., Linn. Soc. Jl., 14, 108, 1878.
Hab.—Grinnell Land.

var. HECLA, Str., Br. Bull., 3, 33, 1880.
Hab.—Hudson's Bay.

65. **Boothii,** Curt., App. Ross Exp., 65, pl. A, figs. 3–5, 1835.
var. CHIONE, Curt., l. c., pl. A, fig. 6, 1835.
Hab.—Arctic Am.

66. **Eurytheme,** Bd.
1. 1. winter form ARIADNE, Edw., Tr. A. E. Soc., 3, 12, 1870; id., But., 2, pl. 4 of Colias, 1878.
2. winter form KEEWAYDIN, Edw., But., 1, 49, pl. 15, 1869; vol. 2, pl. 4 of Colias, 1878.
2. summer form EURYTHEME, Bd., Ann. Soc. Ent. Fr., 2, 10, 286, 1852; Edw., l. c., 1, 45, pl. 14, 1869; vol. 2, pl. 4 of Colias, 1878 *; H. Edw., Pr. Cal. Ac. N. Sci., 5, 162, 1873 *; Boll. Deuts. Entom. Zeits., Berlin, 1880, 24, 249; Edw., Papilio, 3, 182–185, 1883; Sprague, Can. Ent., 12, 100, 1880.
Amphidusa, Bd., Ann. cit., 2, 10, 286, 1852.
Edusa, var. *Californica*, Mén., Cat. Mus. Petr., 1, p. 80, 1855.
Chrysotheme, Str. (not Esper) Cat., 83; Hagen, Pr. Bost. Soc. N. Hist., 22, 173, 1882 (see Edw. Papilio, 3, 171, 1883).
Hab.—Westn. States to Pac.; Br. Am.; occasl. in Mid. States to Mass.; Ont.; Queb.

67. **Hagenii,** Edw., Papilio, 3, 163, 1883 *.
Hab.—Col. to Mont.; Br. Am.

68. **Philodice,** Godt., Enc. Meth., 9, 100, 1819; Bd.-Lec., 64, pl. 21, 1833; Harr., 272, figs. 100–102, 1862 *; Saund., Can.

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Ent., 1, 54, 1869 *; Riley, second Mo. Ent. Rep., 116, 1870 *; Edw., But., 2, pl. 2, 3 of Colias, 1876 *; Fern., But. Me., 30, 1884 *.

var. ANTHYALE, Hüb., Zutr. Ex. Schmett., figs. 307, 308, 1823; Edw., But., 2, pl. 2, cit.

var. ALBINIC, Edw., l. c., 2, pl. 2, cit.

var. MELANIC, id., pl. 3, cit.

Hab.—Atl. States; Miss. Valley; Ont.; Queb.; N. Sco.

69. **Eriphyle,** Edw., Tr. A. E. Soc., 5, 202, 1876.
Hab.—Br. Col.

70. **Harfordii,** H. Edw., ♂, Pr. Cal. Ac. N. Sci., 7, 1877.
Barbara, H. Edw., ♀, l. c., 6, 1877; Edw., Papilio, 4, 2, 1884 *.
Hab.—Cala.

71. **Occidentalis,** Scud., Pr. Bost. Soc. N. Hist., 9, 109, 1862; Edw., But., 1, 57, pl. 18, 1871.
Hab.—Fort Simpson; Br. Am.; Vanc. Isl'd.

Southern form CHRYSOMELAS, H. Edw., Pr. Cal. Ac. N. Sci., 7, 1877.
Hab.—North. Cala.; Utah.

72. **Christina,** Edw., Pr. E. Soc. Phil., 2, 79, 1863; id., But., 1, 43, pl. 13, 1868; id., Papilio, 4, 30, 1884; Lyman, Can. Ent., 16, 5, 1884.
Hab.—Slave River south; Red Deer River; Mt. Judith, Mont.

Southern form ASTRÆA, Edw., Tr. A. E. Soc., 4, 61, 1872; id., Papilio, 4, 30, 1884.
Hab.—Yellow Stone and Mt. Judith, Mont.; Red Deer River; Br. Am. (by Geddes)

73. **Alexandra,** Edw., Pr. E. Soc. Phil., 2, 14, pl. 11, 1863; id., But., 1, 41, pl. 12, 1868; Mead, Rep. Wheeler Exp., 5, 749, 1875 *.
Hab.—Col.; Mont.; Br. Am. (by Geddes)

74. **Edwardsii,** Behr., in But. N. A., 1, 55, pl. 17, 1870.
Hab.—Nev.; Utah; Owen's Lake, So. Cala.; Mt. Hood, W. Terr. (by Morrison); Mont.; Edmonton, Br. Am. (by Geddes)

75. **Emilia,** Edw., Tr. A. E. Soc., 3, 12, 1870.
Hab.—Oreg.

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76. **Interior,** Scud., Pr. Bost. Soc. N. Hist., 9, 108, 1862; Fern., But. Me., 32, 1884.

Philodice, var. *Laurentina*, Scud., l. c., 18, 4, 1876.

Hab.—Cape Breton Isl'd.; Lower St. Lawrence, Queb.; Nipegon River; Saskatch.; Me.

77. **Scudderii,** Reak., Pr. E. Soc. Phil., 4, 217, 1865; Edw., But., 1, 59, pl. 19, 1872; Mead, Rep. Wheeler Exp., 5, 749, 1875.

Hab.—Col.; Mont.; Br. Col.; Br. Am. (by Geddes)

78. **Pelidne,** Bd., Icones, pl. 8, 1832; Bd.-Lec., 66, 1833; id., Sp. Gen., 1, 644, 1836; Mösch., Wien. Ent. Monat., 4, 349, 1860; Edw., But., 2, pl. 1 of Colias, 1874.

Labradorensis, Scud., Pr. Bost. Soc. N. Hist., 9, 107, 1862.

Hab.—Labr.; Ungava Bay.

79. **Palæno,** Linn., Syst. Nat., 2, 764, 1767; Bd., Sp. Gen., 1, 645' 1836.

Hab.—Labr.; Alaska (coll. Behr)

80. **Chippewa,** Edw.

Helena, Edw. (name pre-occupied), Pr. E. Soc. Phil., 2, 80, 1863; id., But., 1, 42, pl. 12, 1868.

Hab.—Fort Simpson; St. Michaels, Alaska; Kotzebue Sound.

81. **Nastes,** Bd., Icones, pl. 8, 1832; id., Sp. Gen., 1, 648, 1836; Herr.-Schaef., Eur. Schmett., pl. 7, figs. 41, 42, pl. 85, figs. 403, 404, 1843; Mösch., Wien. Ent. Monat., 4, 354, pl. 9, 1860; Edw., But., 2, pl. 1 of Colias, 1874.

Hab.—Labr.; Ungava Bay.

82. **Moina,** Str., Br. Bull., 3, 34, 1880.

Hab.—Hudson's Bay.

83. **Behrii,** Edw., Pr. E. Soc. Phil., 6, 1866; id., But., 1, 44, pl. 13, 1868.

Hab.—Yo Semite, Cala. (Alpine)

TERIAS, Swainson.

Group I.

84. **Gundlachia,** Poey, Hist. Nat. de Cuba, 1, 246, pl. 24, 1851.

Hab.—Texas; Ariz.

85. **Proterpia,** Fab., Syst. Ent., 478, 1775; Bd., Sp. Gen., 1, 654, 1836; Morr., 35, 1862.

Hab.—Texas; Ariz.

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86. **Nicippe,** Cram., 3, 210, 1872; Say, Am. Ent., 2, pl. 30, 1825; Bd.-Lec., 55, pl. 20, 1833 *; H. Edw., Pr. Cal. Ac. N. Sci., 166, 1873 *; Edw., Can. Ent., 13, 61, 1881 *.
Hab.—Pa. to Gulf Mex.; Miss. Valley; Ariz.; Cala.; occasl. N. Eng.

87. **Mexicana,** Bd., Sp. Gen., 1, 653, pl. 3, 1836; Morr., 36, 1862.
Hab.—Texas; Ariz.; So. Cala.; Kans.; occasl. Neb.; Iowa; Ill.; Grant County and Racine, Wis.; also Point Pelee, Ont. (auct. Saunders)

88. **Damaris,** Feld., Reise Nov. Lep., 198, 1865; Edw., Papilio, 2, 20, 1882.
Hab.—Ariz.

Group II.

89. **Westwoodii,** Bd., Sp. Gen., 1, 666, 1836.
Hab.—Texas (coll. Mead)

90. **Lisa,** Bd.-Lec., 53, pl. 19, 1833; id., Sp. Gen., 1, 661, 1836; Morr., 34, 1862; Fern., But. Me., 32, 1884.
Hab.—Isle of Shoals, Me. (by Thaxter); south to Gulf Mex.; Westn. States; Ariz.; Hamilton, Ont. (by Moffatt)

91. **Delia,** Cram., 3, pl. 273, fig. A, 1782; Bd.-Lec., 49, pl. 18, 1833 *; id., Sp., Gen., 1, 663, 1836; Morr., 34, 1862.
Hab.—Gulf States.

92. **Jucunda,** Bd.-Lec., 52, pl. 19, 1833; id., Sp. Gen., 1, 665, 1836; Morr., 35, 1862.
Hab.—Gulf States.

NYMPHALIDÆ.

HELICONINÆ.

HELICONIA, Latreille.

93. **Charitonia,** Linn., Syst. Nat., 2, 757, 1767; Cram., 2, pl. 191, fig. F, 1779; Bd.-Lec., 140, pl. 41, 1833; Gosse, in Doubl., Gen. Di. Lep., 1, 97, note, 1850 *; Edw., Papilio, 1, 210, 1881 *; id., Can. Ent., 13, 158, 1881 *; id., But., 2, pl. 1, Char., 1882 *.
Hab.—Fla. to S. Car.; W. Ind.; trop. Am.

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DANAINÆ.

DANAIS, Latreille.

94. **Archippus,** Fab., Ent. Syst., 3, 49, 1793; Sm.-Abb., pl. 6, 1797 *; Bd.-Lec., 137, pl. 40, 1833 *; Harr., 280, 1862 *; Saund., Can. Ent., 5, 4, 1873 *; Riley, third Mo. Ent. Rep., 143, 1871 *; Edw., Can. Ent., 8, 119, 1876 *; id., l. c., 10, 224, 1878; id., Psyche, 2, 169, 1878 *; Mundt, Can. Ent., 11, 239, 1879 *; Burg., Mem. Bost. Soc. N. Hist., 1880, anat. of, plates; Moff., Can. Ent., 12, 37, 1880; Thaxt., l. c., 12, 38, 1880 *; Fern., But. Me., 34, 1884 *.

Plexippus, Say, Am. Ent., 3, pl. 54, 1828; Scud., Psyche, 1, 81, 1875 *.

Hab.—U. S. generally; Br. Am.; Ont. to N. Sco.

95. **Berenice,** Cram., 3, 205, figs. E, F, 1782; Bd.-Lec., 134, pl. 39, 1833 *.

Gilippus, Sm.-Abb., pl. 7, 1797 *.

Hab.—So. States; Col.; N. Mex.; Ariz.

96. **Strigosa,** Bates, Ent. Mo. Mag., 1, 32, 1864.

Hab.—Texas; Ariz.

DIRCENNA, Doubleday.

97. † **Klugii,** Hüb., Zutr. Ex. Schmett., figs. 801, 802, 1837.

Hab.—Rio Grande, Texas (auct. Lintner).

NYMPHALINÆ.

COLÆNIS, Doubleday.

98. **Julia,** Fab., Syst. Ent., 509, 1775.

Alcionea, Cram., 3, pl. 215, figs. A, F, G, 1782.

Hab.—So. Fla.; Texas.

99. **Delila,** Fab., Syst. Ent., 510, 1775.

Cillene, Cram., 3, 215, D, E, 1782.

Hab.—Occasl. Texas.

AGRAULIS, Boisduval and LeConte.

100. **Vanillæ,** Linn., Mus. Lud. Ulr., 306, 1764; Cram., 3, 212, figs. A, B, 1782; Bd.-Lec., 143, pl. 42, 1833 *; Edw., Can. Ent., 12, 122, 1880 *.

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Passifloræ, Fab., Ent. Syst., 3, 60, 1793; Sm.-Abb., pl. 12, 1797 *.

Hab.—So. States; Ariz.; Cala.; occasl. Coalburgh, W. Va. (by Edwards); Cape May, N. J.; Philadelphia, Pa.

ARGYNNIS, Fabricius.

Group I.

101. **Idalia,** Drury, 1, pl. 13, 1775; Bd.-Lec., 147, pl. 43, 1833; Harr., 285, fig. 210, 1862; Edw., Can. Ent., 11, 217, 1879 *; Fern., But. Me., 36, 1884 *.

Hab.—Me. to Neb.; N. J.; Pa.; Arks.

aberr. ASHTAROTH, Fisher, Pr. Ac. N. Sci. Phil., 1858, 179, pl. 2; id., l. c., 1858, 352.

102. **Diana,** Cram., ♂, 2, pl. 98, figs. D, E, 1779; ♂, Say, Am. Ent., 1, pl. 17, 1825; ♀, Edw., Pr. E. Soc. Phil., 3, 431, 1864; id., ♂ ♀, But., 1, 63, pl. 20, 1868; 2, pl. 7 of Argyn. (prepy stages), 1876; id., Can. Ent., 6, 121, 1874 *.

Hab.—W. Va. to Ga.; South. Ohio to Ill.; Ky.; Tenn.; Arks.

103. **Nokomis,** Edw., Pr. Ac. N. Sci. Phil., 1862, 221; id., But., 1, 73, pl. 23, 1868; Mead, Wheeler Rep., 5, 751, pl. 35, 1875.

Hab.—North. Ariz.; So. Utah.

104. **Nitocris,** Edw., Tr. A. E. Soc., 5, 15, 1874; Mead, Rep. Wheeler Exp., 5, 751, 1875.

♀ aberr. *Nokomis*, Str., Ruff. Rep., pl. 1, figs. 3, 4, 1879.

Hab.—So. Ariz. to Nev.

105. **Leto,** Behr., Pr. Cal. Ac. N. Sci., 2, 173, 1862; Edw., But., 1, 85, pl. 29, 1869.

Cybele, Bd., Lep. de la Cala., 60, 1869.

Hab.—Cala.; Oreg.; W. Terr.; Nev.; Mont.

106. **Carpenterii,** Edw., Tr. A. E. Soc., 5, 204, 1876.

Hab.—Ariz.

107. **Cybele,** Fab., Syst. Ent., 516, 1775; Bd.-Lec., 51, pl. 45, ♀, 1833; Edw., But., 1, 67, pl. 21, 1868; id., Can. Ent., 6, 121, 1874 *; Saund., Can. Ent., 4, 121, 1872 *; Fern., But. Me., 38, 1884.

Hab.—Atl. and West. St. to Neb.; Ont.; Queb.; Fort Edmonton, Br Am.

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108. **Aphrodite,** Fab, Mant., 2, 62, 1767; Harr., 286, fig. 211, ♀, 1862; Edw., But., 1, 71, pl. 22, 1868; id., Can. Ent., 6, 121, 1874 ⁎; Fern., But. Me., 39, 1884.
Hab.—North., Mid. and West. St. to Tenn.; Neb.; Mont.; Kans.; Ont.; Queb.; N. Sco.; Fort Edmonton, Br. Am.

109. **Alcestis,** Edw., Tr. A. E. Soc., 5, 289, 1876; id., Can. Ent., 13, 69, 1879 ⁎; Worth., Can. Ent., 10, 37, 1878.
Hab.—Mich.; Ill.; Iowa; Mont.; Col.

110. **Nausicaa,** Edw., Tr. A. E. Soc., 5, 104, 1874; Mead, Rep. Wheeler Exp., 5, 752, 1875; Edw., Papilio, 2, 6, 1882.
Hab.—Ariz.

111. **Lais,** Edw., Can. Ent., 15, 209, 1883.
Hab.—Fort Edmonton, Br. Am. (by Geddes)

112. **Atlantis,** Edw., Pr. Ac. N. Sci. Phil., 1862, 54; Pack. Guide, 252, 1869 ⁎; Edw., But., 1, 75, pl. 24, 1868; id., Can. Ent., 9, 35, 1877 ⁎; Fern., But. Me., 40, 1884.
Hab.—N. E.; N. Y.; Iowa; Ont.; Queb.; N. B.; N. F'land; Br. Am.

113. **Electa,** Edw., Field and Forest, 3, 143, 1878.
Hab.—Col.; Los Vegas, N. Mex.; Mont.

114. **Columbia,** H. Edw., Pr. Cal. Ac. N. Sci., 6, 1877; id., Field and Forest, 3, 102, 1877.
Hab.—Lakes Lahache and Quesnelle, Br. Col.

115. **Hesperis,** Edw., Pr. E. Soc. Phil., 2, 502, 1864; id., But., 1, 79, pl. 26, 1874; Mead, Rep. Wheeler Exp., 5, 754, 1875.
Hab.—Col.; Utah; Mont.

116. **Hippolyta,** Edw., Can. Ent., 11, 81, 1879.
Hab.—Oreg.

117. **Bremnerii,** Edw., Tr. A. E. Soc., 4, 63, 1872; id., But., 2, pl. 4 of Argyn., 1874.
Hab.—Br. Col.; W. Terr.

118. ZERENE, Bd., Ann. Soc. Ent. Fr., 2, 10, 303, 1852; Behr, Pr. Cal. Ac. N. Sci., 2, 175, "No. 9," 1862.
Hydaspe, Bd., Lep. de la Cala., 60, 1869.
var. Edw., But., 1, 91, pl. 32, 1870.
Hab.—Cala.; Nev.

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119. MONTICOLA, Behr, l. c., 2, 175, "No. 8," 1862; Edw., But., 1, 81, pl. 27, 1868.
var. PURPURASCENS, H. Edw., Pr. Cal. Ac. N. Sci., 6, 1876.
Hab.—Cala.; Oreg.; Nev.; Mont.; Summit, Br. Am. (by Geddes)

120. **Rhodope,** Edw., Tr. A. E. Soc., 5, 13, 1874; But., 2, pl. 6 of Argyn., 1874.
Hab.—Br. Col.

121. **Behrensii,** Edw., Tr. A. E. Soc., 2, 370, 1869; id., But., 1, 89, pl. 31, 1870.
Hab.—Mendocino, Cal.

122. **Halcyone,** Edw., ♂, But., 1, 83, pl. 28, 1869.
Hab.—Col.; Wyom.

123. **Chitone,** Edw., Can. Ent., 11, 82, 1879.
Hab.—Utah; Ariz.; S. E.; Cala.

124. **Coronis,** Behr, Pr. Cal. Ac. N. Sci., 2, 173, 1862, "No. 2;" Edw., Pr. E. Soc. Phil., 3, 435, 1864.
♀ *Nevadensis*, Edw., But., 1, pl. 33, 1871.
Juba, Bd., Lep. de la Cala., 60, 1869.
Hab.—So. Cala.; Shasta, Cala.; Utah; W. Terr.; Mont.; Belly River and Crow's Nest, Br. Am. (by Geddes)

125. **Callippe,** Bd., Ann. Soc. Ent. Fr., 2, 10, 302, 1852; Edw., But., 1, 77, pl. 25, 1868.
Hab.—Cala.

126. **Nevadensis,** Edw. ♂ (not ♀), Tr. A. E. Soc., 3, 14, 1870; id., ♂ (not ♂), But., 1, 93, pl. 33, 1871 (the ♀ is *Coronis*).
var. MEADII, Edw., Tr. A. E. Soc., 5, 69, 1872; But., 2, pl. 2 of Argyn., 1875.
Hab.—Nev.; Utah; Mont.

127. **Edwardsii,** Reak., Pr. E. Soc. Phil., 6, 137, 1866; Edw., But., 1, 87, pl. 30, 1869.
Hab.—Col.; Mont.; Blackfoot Reserve, Br. Am. (by Geddes)

128. **Liliana,** H. Edw., Pr. Cal. Ac. N. Sci., 6, 1876.
aberr. BARONII, Edw., Tr. A. E. Soc., 9, 3, 1881.
Hab.—Cala.; Utah.

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129. **Rupestris,** Behr., Pr. Cal. Ac. N. Sci., 2, 175, 1862, "No. 6"; id., l. c., 3, 84, 1863; Edw., But., 2, pl. 7 of Argyn., 1876.
var. IRENE, Bd.; *Egleis*, var. *Irene*, Bd., Lep. de la Cala., 59, 1869.
Irene, Edw., Can. Ent., 11, 53, 1879.
Hab.—Cala., Mt. Shasta, Mt. Bradley; Weber Mts., Utah.

130. **Laura,** Edw., Can. Ent., 11, 49, 1879.
Hab.—Cala.; Nev.

131. **Macaria,** Edw., Field and Forest, 3, 86, 1877.
Hab.—Cala.

132. **Inornata,** Edw., Tr. A. E. Soc., 4, 64, 1872; id., But., 2, pl. 5 of Argyn., 1876.
Hab.—Cala.; Nev.

133. **Adiante,** Bd., Lep. de la Cala., 61, 1869; Behr, Pr. Cal. Ac. N. Sci., 2, 175, 1862, "No. 7," 1862.
Adiaste, Edw., Pr. E. Soc. Phil., 3, 436, 1864.
Hab.—Sta. Clara Mts., Cala.

134. **Artonis,** Edw., Tr. A. E. Soc., 9, 2, 1881.
Hab.—Col.; Nev.

135. **Clio,** Edw., l. c., 5, 106, 1874.
Hab.—Mont.; Br. Am., Crow's Nest; Head of Peace River.

136. **Opis,** Edw., l. c., 5, 105, 1874; id., But., 2, pl. 3 of Argyn., 1875.
Hab.—Bald Mt., Br. Col.

137. **Bischoffii,** Edw., l. c., 3, 189, 1870; id., But., 2, pl. 3 of Argyn., 1875.
Hab.—Sitka, Alaska.

138. **Eurynome,** Edw., Tr. A. E. Soc., 4, 66, 1872; id., But., 2, pl. 1 of Argyn., 1875 *; Mead, Rep. Wheeler Exp., 5, 755, 1875.
Astarte, Edw. (not Doubl.), Pr. E. Soc. Phil., 1, 221, 1862.
Hab.—Col.; Mont.; Br. Am.

139. **Montivaga,** Behr, Pr. Cal. Ac. N. Sci., 2, 174, "No. 4," 1862; id., l. c., 3, 84, 1863.
Arge, Str., Cat., 114, 1878.
Hab.—Sierras, Cala.; Nev.

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var. ERINNA, Edw., Can. Ent., 15, 33, 1883.

Hab.—W. Terr.; Col.; Mont.; Red Deer River, Br. Am.

140. **Egleis,** Bd., Lep. de la Cala., 59, 1869; Edw., Can. Ent., 11, 53, 1879 *.

Montivaga, Edw. (not Behr), Pr. E. Soc. Phil., 3, 435, 1864.

♀ *Mormonia*, Bd.. Lep. de la Cala., 58, 1869.

Hab.—Cala.; Nev.

Group II.

141. **Myrina,** Cram., 2, 189, figs. B, C, 1779; Say, Am. Ent., 3, pl. 46, 1828; Bd.-Lec., 155, pl. 45, 1833; Harr., 286, fig. 112, 1862; Saund., Can. Ent., 1, 55, 1869 *; Scud., Am. Nat., Sept. 1872; Edw., Can. Ent., 8, 161, 1876 *; id., l. c., 9, 34, 1877 *; id., Papilio, 1, 134, 1881; Grub., Jen. Zeitschr. Nat., 17, 479, pl. 8, figs. 34, 35, 1884; Fern., But. Me., 40, 1884 *.

Hab.—N. E. to Mont.; Col.; Ont.; Queb.; N. Sco.; Br. Am.; Sitka, Alaska.

142. **Triclaris,** Hüb., Samml. Ex. Schmett., 2 (1818–1824); Mead, Rep. Wheeler Exp., 5, 757, 1875; Scud., Pr. Bost. Soc. N. Hist., 17, 294, 1875.

Ossianus, Bd., Icon., pl. 19, 1832; Bd.-Lec., 157, 1833; Morr., 48, 1862.

Hab.—Arctic Am.; Labr.; Col.

143. **Helena,** Edw., Tr. A. E. Soc., 3, 268, 1871; Mead, Rep. Wheeler Exp., 5, 757, 1875.

Hab.—Mont.; Col.; N. Mex.; Ariz.

144. **Montinus,** Scud., Pr. Ess. Ins., 3, 166, 1862; id., Bost., Jl. N. Hist., 7, 626, pl. 14, 1863.

Hab.—White Mts., N. H.

145. **Chariclea,** Schneid., Neu. Mag., 5, 588, 1794; Hüb., Eur. Schmett., 1, figs. 769, 770, 1824–1826; Bd.-Lec., 161, 1833; Bd., Sp. Gen., 1, pl. 11, fig. 2, 1836; Morr., 49, 1862; Scud., Pr. Bost. Soc. N. Hist., 17, 297, 1875; McLach., Linn. Soc. Jl., 14, 109, 1878.

Hab.—Arctic Am. to lat. 81° 52′; Br. Am. to Pac.; Greenl.; Labr.

var. OBSCURATA, McLachl., l. c., 14, 110, 1878.

Hab.—Grinnell Land.

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146. **Butlerii,** Edw., Can. Ent., 15, 32, 1883.
Hab.—N. W. Am.; Grinnell Land; Nova Zembla.

147. **Boisduvallii,** Somm., in Bd. Icon., 1, 98, pl. 20, 1832.
Hab.—Br. Col.; Crow's Nest, Br. Am. (by Geddes); Boreal Am.; Labr.

148. **Freya,** Thunb., Diss. Ins. Suec., 2, 34, pl. 5, 1791; Hüb., Eur., Schmett., 1, figs. 55, 56, 1793, figs. 771, 772, 1824–1826; Morr., 46, 1862; Scud., l. c., 17, 299, 1875; Mead, Rep. Wheeler Exp., 5, 756, 1875.
Hab.—Boreal Am.; Br. Am.; Alaska; Col.

var. TARQUINIUS, Curt., App. Ross Exp., 68, 1835 *.
Hab.—Arctic Am.

149. **Polaris,** Bd., Icon., pl. 20, 1833; id., Sp. Gen., 1, pl. 11, fig. 1, 1836; Bd.-Lec., 159, 1833; Morr., 48, 1862; Scud., l. c., 17, 294, 1875.
Hab.—Labr.; Arctic Am. to lat. 81° 52′; Greenl.

150. **Frigga,** Thunb., Diss. Ins. Suec., 2, 33, 1791; Hüb., Eur. Schmett., 1, figs. 49, 50, 1793; Scud., l. c., 17, 306, 1875.
Hab.—Labr.; Arctic Am.; Alaska; Col.

151. **Improba,** Butl., Ent. Mo. Mag., 13, 206, 1877.
Hab.—Arctic Am.

152. **Bellona,** Fab., Syst. Ent., 517, 1775; Bd.-Lec., 164, pl. 45, 1833; Harr., 287, figs. 113, 114, 1862; Scud., Am. Nat., Sept. 1872; id., Butterflies, 143, figs. 129, 130, 1881; Edw., Papilio, 1, 134, et seq., 1881; Fern., But. Me., 41, 1884 *.
Hab.—North. U. S.; Col.; Br. Am.; Ont.; Queb.

153. **Epithore,** Bd., Lep. de la Cala., 58, 1869; Edw., Pr. E. Soc. Phil., 3, 504, 1864.
Hab.—Cala. to Oreg.; Nev.

var. KREIMHILD, Str., Ruff. Rep., p. 1854, 1879.
Hab.—Utah; Ariz.

EUPTOIETA, Doubleday.

154. **Claudia,** Cram., 1, pl. 69, figs. E, F, 1779; Edw., Can. Ent., 2, 163, 1870 *; id., l. c., 12, 231, 1880 *; Mead, Rep. Wheeler Exp., 5, 750, 1875 *.
Columbina, Godt. (not Fabr.), Enc. Meth., 9, 260, 1819; Bd.-Lec., 153, pl. 44, 1833; Morr., 44, 1862.
Hab.—N. Y. to Gulf Mex.; Miss. Valley; Col.; Ariz.; Cala.; occasl. N. H. and Queb. (Can. Ent., 14, 219)

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155. **Hegesia,** Cram., 3, pl. 209, figs. E, F, 1872.
Hab.—Occasl. So. Cala.; Texas.

MELITÆA, Fabricius.

Group I.

156. **Phaeton,** Dru., 1, pl. 21, 1767; Bd.-Lec., 167, pl. 47, 1833; Harr., 288, fig. 115, 1862; Edw., Can. Ent., 1, 59, 2, 36, 1869 *; id., l. c., 6, 159, 1874 *; id., But., 2, pl. 1 of Melit., 1875 *; id, Papilio, 4, 68, 1884 *; Grub., Jen. Zeitschr. Nat., 17, 476, pl. 8, figs. 25–27, 1884 *; Fern., But. Me., 43, 1884 *.
aberr. SUPERBA, Str., Cat., p. 125, 1878.
aberr. PHÆTHUSA, Hulst., Br. Bull., 3, 77, 1880.
Hab.—U. S. east of Rocky Mts.; Ont.; Queb.; Lake of the Woods.

157. **Cooperi,** Behr, Pr. Cal. Ac. N. Sci., 3, 90, 1863 *.
Perdiccas, Edw., Papilio, 1, 44, 1881.
Hab.—Puget Sound, W. Terr.; Big Horn Mts., Mont.; Vanc. Isld.

158. **Chalcedon,** Doubl.-Hew., Gen. Di. Lep., 1, 180, pl. 23, 1847; Edw., Pr. E. Soc. Phil., 1, 222, 1862; id., But., 1, 97, pl. 34, 1871 *; id., Papilio, 4, 63, 1884 *; H. Edw., Pr. Cal. Ac. N. Sci., 5, 167, 1873 *.
Hab.—Cala.
var. DWINELLEI, H. Edw., Papilio, 1, 51, 1881.
Hab.—Mt. Shasta, Cala.

159. **Colon,** Edw., Papilio, 1, 45, 1881.
Hab.—Columbia River, west W. Terr., and Oreg.

160. **Anicia,** Doubl.-Hew., Gen. Di. Lep., 1, 179, pl. 23, 1848; Edw., Pr. E. Soc. Phil., 1, 223, 1862.
Hab.—Cala.; Nev.; Col.; Mont.

161. **Nubigena,** Behr, Pr. Cal. Ac. N. Sci., 3, 91, 1863; Mead, Rep. Wheeler Exp., 5, 758, 1875 *.
Hab.—Cala.; Nev.; N. Mex.; Col.; Mont.
var. WHEELERI, H. Edw., Papilio, 1, 52, 1851.
Hab.—Nev.

162. **Quino,** Behr, Pr. Cal. Ac. N. Sci., 3, 90, 1863.
Hab.—Mendocino, Cala.

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163. **Baroni,** H. Edw., Papilio, 1, 52, 1882; Edw., Can. Ent., 11, 149, 1879 *.
Hab.—North Cala.

164. **Rubicunda,** H. Edw., Papilio, 1, 52, 1882.
Hab.—North Cala.

165. **Editha,** Bd., Ann. Soc. Ent. Fr., 2, 10, 304, 1852; Morr., 51, 1862; H. Edw., Pr. Cal. Ac. N. Sci., 5, 167, 1873.
Hab.—South. Cala.

166. **Helvia,** Scud., Pr. Bost. Soc. N. Hist., 12, 405, 1869.
Hab.—Ramparts, Youcon River, Alaska.

Group II.

167. **Sterope,** Edw., Tr. A. E. Soc., 3, 190, 1870.
Hab.—Oreg.

168. **Acastus,** Edw., Tr. A. E. Soc., 5, 16, 1874; Mead, Rep. Wheeler Exp., 5, 761, 1875.
Hab.—Nev.; Utah; Mont.

169. **Palla,** Bd., Ann. Soc. Ent. Fr., 2, 10, 305, 1852; Behr, Pr. Cal. Ac. N. Sci., 3, 88, 1863; Morr., 52, 1862; H. Edw., Pr. Cal. Ac. N. Sci., 5, 167, 1873 *.
Hab.—Cala. to W. Terr.; Nev.; Mont.; Br. Am., Crow's Nest (by Geddes).

170. **Whitneyii,** Behr, Pr. Cal. Ac. N. Sci., 3, 88, 1863.
Pola, Bd., Lep. de la Cala., 56, 1869.
Hab.—Cala.; Nev.

171. **Hoffmanni,** Behr, l. c., 3, 89, 1863.
var. HELCITA, Bd., Lep. de la Cala., 55, 1869.
Hab.—Cala.; Nev.; Oreg.; Col.; Mont.

172. **Gabbii,** Behr, l. c., 3, 89, 1863.
Sonoræ, Bd., Lep. de la Cala., 56, 1869.
Hab.—South. Cala.; Utah; Ariz.

173. **Harrisii,** Scud., Pr. Ess. Ins., 3, 167, 1862; Edw., Can. Ent., 9, 165, 1867 *; Fern., But. Me., 45, 1884 *.
Hab.—N. E.; N. Y.; Mich.; Ill.; Wis.; Ont.; Queb.

Group III.

174. **Ulrica,** Edw., Can. Ent., 9, 189, 1877.
Imitata, Str., Lep., Pt. 14, 1878.
Hab.—S. W. Texas.

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175. **Dymas,** Edw., Can. Ent., 9, 190, 1877.
Larunda, Str., l. c., Pt. 14, 1878.
Hab.—S. W. Texas.

176. **Perse,** Edw., Papilio, 2, 136, 1882.
Hab.—Ariz.

177. **Chara,** Edw., Can. Ent., 15, 209, 1883.
Hab.—So. Ariz.

178. **Leanira,** Bd., Lep. de la Cala., 27, 1869; Mead, Rep. Wheeler Exp., 5, 759, pl. 37, 1875.
var. OBSOLETA, H. Edw., Pr. Cal. Ac. N. Sci., 6, 1876.
Hab.—Cala.; Ariz.; Nev.; Mont.; Br. Am., Garnett Ranche (by Geddes).

179. † **Alma,** Str., Lep., pl. 15, ♂, 1878; id., Ruff., Rep., p. 1855, 1879.
Hab.—So. Utah; Ariz.

180. **Fulvia,** Edw., Can. Ent., 11, 117, 1879.
Hab.—West. Texas; Col.

181. **Thekla,** Edw., Tr. A. E. Soc., 3, 191, 1870.
Hab.—So. Cala.; Ariz.

182. **Bollii,** Edw., Field and Forest, 3, 101, 1877.
Hab.—S. W. Texas; Ariz.

183. **Minuta,** Edw., Pr. Ac. N. Sci. Phil., 1861, 161; Morr., 325, 1862; Mead, Rep. Wheeler Exp., 5, pl. 36, 1875.
Hab.—Col.; Ariz.; N. Mex.

184. **Arachne,** Edw., Tr. A. E. Soc., 2, 372, 1869; id., l. c., 9, 8, 1881.
Hab.—Col.; Ariz.; West. Texas.

185. **Nympha,** Edw., Papilio, 4, 53, 1884.
Hab.—So. Ariz.

PHYCIODES, Doubleday.

Group I.

186. **Nycteis,** Doubl.-Hew., Gen. Di. Lep., 181, pl. 23, 1847; Lintn., Ent. Cont., 1, 26, 1872 ✱; Riley, Pr. Am. A. A. Sci., 1874, 108 ✱; Edw., Can. Ent., 5, 224, 1873 ✱; id., l. c., 11, 101,

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1879 *; Grub., Jen. Zeitschr. Nat., 17, 478, pl. 8, figs. 30, 32, 1884 *; Fern., But. Me., 46, 1884 *.

Oenone, Scud., Pr. Ess. Ins., 3, 166, 1862.

Harrisii, Edw., Can. Ent., 2, 163, 1870 *; Saund., l. c., 4, 161, 1872 *.

Hab.—Me. to N. C. and west; Miss. Valley; Ont.; Queb.

var. DRUSIUS, Edw., Papilio, 4, 57, 1884.

Oenone, Mead, Rep. Wheeler Exp., 5, 762, 1875.

Hab.—Col.; Ariz.

187. **Carlota,** Reak., Pr. E. Soc. Phil., 6, 141, 1867.

Nycteis, Edw. (not Doubl.), Pr. Ac. N. Sci. Phil., 1861, 161.

Hab.—Southn. and Westn. St.; Rocky Mts.; Mont. to Ariz. (occasl. in W. Va.)

Group II.

188. **Vesta,** Edw., Tr. A. E. Soc., 2, 371, 1869; id., Can. Ent., 11, 129, 1879 *.

1. winter form, But., 2, pl. 2 of Phyc., 1878.
2. summer form, l. c., pl. cit.

Hab.—Texas.

189. **Phaon,** Edw., Pr. E. Soc. Phil., 2, 505, 1864.

1. winter form, But., 2, pl. 2 of Phyc., 1878.
2. summer form, l. c., pl. cit.

Hab.—Gulf St.; Texas; occasl. Kans.

190. **Tharos,** Dru.

1. winter form MARCIA, Edw., Tr. A. E. Soc., 2, 207, 1868; id., Can. Ent., 9, 1, 1877 *; id., But., 2, pl. 1 of Phyc., 1878 *; Grub., Jen. Zeitschr. Nat., 17, 477, pl. 8, figs. 28, 29, 1884 *; Fern., But. Me., 47, 1884 *.
2. summer form MORPHEUS, Fab., Syst. Ent., 550, 1775; Edw., But., 2, pl. 2 of Phyc., 1878 *.

Tharos, Dru., 1, pl. 21, ♀, 1767; Bd.-Lec., p. 170, pl. 47, ♂ (not ♀), 1833; Mead, Can. Ent., 7, 166, 1875 *.

Cocyta, Cram., 2, pl. 101, figs. A, B, ♂, 1779.

Pharos, Harr., 289, 1862.

aberr. PACKARDII, Saund., in Pack. Guide, 256, 1869; Edw., But., 2, pl. 2 of Phyc., figs. 11, 12.

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(For experiments upon the effect of cold applied to chrysalids of *Tharos*, see Edw., Can. Ent., 9, pp. 4, 204, 1877.)
Hab.—U. S. excluding Pac. St.; Br. Am. to Pac.; Ont.; Queb.; N. Sco.; Antic.; So. Labr.

191. **Batesii,** Reak., Pr. E. Soc. Phil., 5, 226, 1865.
Tharos, Bd.-Lec., 171, pl. 47, fig. 5, ♀, 1833.
Hab.—W. Va.; Md.; N. Y. to Ohio.

192. **Pratensis,** Behr, Pr. Cal. Ac. N. Sci., 3, 86, 1863.
♀, *Campestris*, Behr, l. c., 3, 86, 1863.
Pulchella, Bd., Ann. Soc. Ent. Fr., 2, 10, 306, 1852.
Hab.—Cala.; Oreg.; Ariz.

193. **Orseis,** Edw., Tr. A. E. Soc., 3, 206, 1871.
Hab.—Cala.; W. Terr.; Oreg.
(perhaps winter form of *Pratensis*).

194. **Camillus,** Edw., Tr. A. E. Soc., 3, 268, 1871.
♀, *Emissa*, Edw., l. c., 3, 269, 1871.
Hab.—Col.; Mont.; Kans.

var. PALLIDA, Edw., Pr. E. Soc. Phil., 2, 505, 1864.
var. MATA, Reak, Pr. E. Soc. Phil., 6, 142, 1866; Str., Lep., pl. 8, fig. 11, 1874.
Hab.—Col.; Mont.; Texas; Kans.

195. **Mylitta,** Edw., Pr. Ac. N. Sci. Phil., 1861, 160; Morr., 324, 1862; H. Edw., Pr. Cal. Ac. N. Sci., 5, 167, 1873 *; Mead, Rep. Wheeler Exp., 5, 764, 1875 *.
Collina, Behr, Pr. Cal. Ac. N. Sci., 3, 86, 1863.
Epula, Bd., Lep. de la Cala., 54, 1869.
Hab.—Cala.; W. Terr.; Ariz.; Col.; Utah.

196. **Montana,** Behr, Pr. Cal. Ac. N. Sci., 3, 85, 1863.
Orsa, Bd., Lep. de la Cala., 55, 1869.
Hab.—Cala.; Lake Tahoe, Nev.

197. **Picta,** Edw., ♂, Pr. E. Soc. Phil., 4, 201, 1865; id., ♀, Papilio, 2, 21, 1882; Str., Lep., pl. 8, fig. 10, 1874.
♀, *Canace*, Edw., Tr. A. E. Soc., 3, 206, 1871.
Hab.—Col.; N. Mex.; Ariz.; Neb.

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ERESIA, Doubleday.

198. **Frisia,** Poey, Cent. Lep. Cuba, 9, pl. 2, 1832.
Gyges, Hew., Ex. But., 3, pl. 6, Eres., figs. 45, 46, 1864.
Hab.—Key West, Fla.

199. **Texana,** Edw., Pr. E. Soc. Phil., 2, 81, 1863; id., Can. Ent., 11, 127, 1879 *.
Cincta, Edw., l. c., 2, 502, 1864.
Smerdis, Hew., Ex. But., 3, pl. 5, Eres., figs. 33, 34, 1864.
Hab.—Texas; Neb.

200. **Punctata,** Edw., Tr. A. E. Soc., 3, 191, 1871.
Hab.—Ariz.; N. Mex.

SYNCHLOE, Boisduval.

201. **Janais,** Dru., 3, pl. 17, figs. 5, 6, 1782.
Hab.—Washita Valley, Texas.

202. **Mediatrix,** Feld., Reise Nov. Lep., 3, 395, 1867.
Saundersii, Edw., Syn. (not Doubl.)
Hab.—Texas.

203. **Adjutrix,** Scud., Buff. Bull., 2, 269, 1875.
Lacinia, Edw., Syn. (not Hüb.)
Hab.—Texas.

204. **Erodyle,** Bates, Ent. Mo. Mag., 1, 84, 1864.
Hab.—Texas.

205. **Crocale,** Edw., Tr. A. E. Soc., 5, 17, 1874; Mead, Rep. Wheeler Exp., 5, 765, pl. 37, 1875.
Hab.—Ariz.

CYSTINEURA, Doubleday.

206. **Amymone,** Mén., Cat. Mus. Petr., 123, pl. 9, 1857.
Dorcas, Edw., Syn. (not Fab.)
Hab.—Texas.

GRAPTA, Kirby.

207. **Interrogationis,** Fab.
1. dimorphic form FARRICII, Edw., Tr. A. E. Soc., 3, 5, 1870; id., But., 1, 115, pl. 39, 1872 *; id., Can. Ent., 14, 189 1882 *.
Interrogationis, Harr., fig. 124, ♀, 1862.

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2. dimorphic form UMBROSA, Lintn., Tr. A. E. Soc., 2, 313, 1869; id., l. c., 197, 1870; Edw., But., 1, 111, pl. 38, 1872.
Interrogationis, Fab., ♀, Supplt., 424, 1798; Harr., 298 (text, not plate), 1862; Fern., But. Me., 49, 1884 *.
C. Aureum, Cram., 1, pl. 19, figs. E, F, 1779; Sm.-Abb., pl. 11, 1797; Bd.-Lec., ♂, pl. 51, 1833.

(For experiments upon the effect of cold applied to chrysalids of *Interrogationis*, see Edw., Psyche, 3, 15, 1880.)

Hab.—U. S., except Pac. St.; Ariz.; Ont.; Queb.; N. Sco.

208. **Comma**, Harr.

1. winter form HARRISII, Edw., Can. Ent., 5, 184, 1873.
Comma, Harr., 300, pl. 4, fig. 1, 1862; Lintn., Pr. E. Soc. Phil., 3, 55, 1864 *; Edw., But., 1, 101, pl. 36, 1871 *; id., Can. Ent., 14, 189, 1882 *; Fern., But. Me., 5, 1884 *.
2. summer form DRYAS, Edw., Tr. A. E. Soc., 3, 17, 1870; id., But., 1, 109, pl. 37, 1871 *.

Hab.—East., Mid., N. W. St.; N. C.; Tenn.; Kans. to Texas; Ont.; Queb.; N. Sco.

209. **Satyrus**, Edw.

1. dimorphic form SATYRUS, Edw., Tr. A. E. Soc., 2, 374, 1869; id., But., 1, 121, pl. 40, 1872; H. Edw., Pr. Cal. Ac. N. Sci., 5, 168, 1873 *; Pears., Can. Ent., 7, 216, 1875 *; Mead, Rep. Wheeler Exp., 5, 168, 1875.
2. dimorphic form MARSYAS, Edw., Tr. A. E. Soc., 3, 16, 1870; id., But., 2, pl. 3 of Grapta, 1879.

Hab.—Oreg.; Cala.; Mont.; Col.; N. Mex.; Br. Am.; Ont.; Queb.

210. **Hylas**, Edw., Tr. A. E. Soc., 4, 68, 1872; id., But., 2, pl. 2 of Grapta, 1875; Mead, Rep. Wheeler Exp., 5, 768, 1875.

Hab.—Col.

211. **Rusticus**, Edw., Tr. A. E. Soc., 5, 107, 1874; id., But., 2, pl. 3 of Grapta, 1879.

Hab.—Cala.; Vanc. Isld.

212. **Faunus**, Edw., Pr. Ac. N. Sci. Phil., 1862, 222; id., But., 1; 99, pl. 35, 1870; Caulf., Can. Ent., 7, 49, 1875 *; Fern., But. Me., 52, 1884 *.

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Hab.—Mts. of N. E. and N. Y.; Mich.; Neb.; W. Terr.; Br. Am.; Atl. to Pac.; occasl. W. Va. to Ga.

213. **Silvius,** Edw., Tr. A. E. Soc., 5, 108, 1874.
Hab.—Cala.

214. **Zephyrus,** Edw., l. c., 3, 16, 1870; id., But., 1, 123, pl. 40, 1872; id., l. c., 2, pl. 3 of Grapta, 1879 *; H. Edw., Pr. Cal. Ac. N. Sci., 5, 169, 1873 *; Mead, Rep. Wheeler Exp., 5, 769, 1875.
Hab.—Mont.; Nev. to N. Mex.; Ariz.; Utah; Cala; Oreg.

215. **Gracilis,** Gr.-Rob., Ann. N. Y. Lyc. N. Hist., 8, 432, 1867; Str., Lep., pl. 8, fig. 14, 1874.
Hab.—White Mts., N. H.; Queb.; Br. Am.; Alaska.

216. **Silenus,** Edw.
1. dimorphic form SILENUS, Edw., Tr. A. E. Soc., 3, 15, 1870; id., But., 2, pl. 1 of Grapta, 1874.
2. dimorphic form OREAS, Edw., Tr. A. E. Soc., 2, 373, 1869; id., l. c., 5, 109, 1874.

Hab.—Cala.; W. Terr.; Vanc. Isld.; Mont.

217. **Progne,** Cram., 1, pl. 5, figs. E, F, 1775; Bd.-Lec., 188, pl. 50, 1833; Harr., 301, 1862; Lintn., Pr. E. Soc. Phil., 3, 58, 1864 *; Edw., Can. Ent., 11, 9, 1879 *; Fern. But. Me., 53, 1884 *.
C. Argenteum, Kirby, Faun. Bor. Am., 4, 292, pl. 3, figs. 6, 7, 1837.

Hab.—North. and West. St.; Br. Am. to N. Sco.; Antic.

218. **J. Album,** Bd.-Lec., 185, pl. 50, 1833; Harr., 298, 1862; Lintn., Pr. E. Soc. Phil., 3, 58, 1864 *; Fern., But. Me., 54, 1884 *.
Hab.—North. St. to Wis.; Br. Am., Pac. to Nov. Sco.; So. Labr.

VANESSA, Fabricius.

219. **Antiopa,** Linn., Syst. Nat., 1, 2, 776, 1767; Bd.-Lec., 173, 1833; Harr., 296, figs. 121, 122, 1862 *; Lintn., Pr. E. Soc. Phil., 3, 59, 1864; Saund., Can. Ent., 1, 75, 1869 *; Fern., But. Me., 55, 1884 *.
var. —— Bunker, Can. Ent., 8, 240, 1876.
aberr. LINTNERII, Fitch, third Rep. N. Y. St. Ag. Soc., 485, 1856.

Hab.—North Am. generally.

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220. **Californica,** Bd., Ann. Soc. Ent. Fr., 2, 10, 306, 1852; Morr., 58, 1862; Behr, Pr. Cal. Ac. N. Sci., 3, 123, 1864; H. Edw., l. c., 5, 171, 1875 *.

Hab.—Cala.; Oreg.; Nev.; Colo.

221. **Milbertii,** Godt., Enc. Meth., 9, 307. 1819; Bd.-Lec., 187, pl. 50, 1833; Harr., 302, fig. 125, 1862; Lintn., Pr. E. Soc. Phil., 3, 61, 1864 *; Saund., Can. Ent., 1, 76, 1869 *; H. Edw., Pr. Cal. Ac. N. Sci., 5, 170, 1873 *; Fern., But. Me., 56, 1884 *.

Furcillata, Say, Am. Ent., 2, pl. 27, 1825.

Hab.—North. St. to Mont.; Col.; Ariz.; Pac. St.; Br. Am. to N. Sco.; N. F'land.

PYRAMEIS, Doubleday.

222. **Atalanta,** Linn., Syst. Nat., 1, 2, 779, 1767; Esper, Eur. Schmett., 1, pl. 14, 1777; Harr., 294, fig. 120, 1862 *; Birch., Ent. Mo. Mag., 13, 209, 1878 *; Edw., Can. Ent., 14, 229, 1882 *; Fern., But. Me., 57, 1884 *.

Hybrid bet. *Atalanta* and *Carye*, H. E., Pr. Cal. Ac. N. Sci., 1876.

Hab.—N. Am. generally.

223. **Huntera,** Fab., Syst. Ent., 499, 1775; Sm.-Abb., pl. 9, 1797 *; Bd.-Lec., 180, pl. 48, 1833 *; Harr., 292, fig. 119, 1862 *; Lintn., Pr. E. Soc. Phil., 3, 63, 1864 *; Saund., Can. 1, 105, 1869 *; Fern., But. Me., 58, 1884 *.

Hab.—N. Am. generally.

224. **Cardui,** Linn., Syst. Nat., 1, 2, 774, 1767; Esper, Eur. Schmett., 1, pl. 10, 1777; Bd.-Lec., 178, 1833; Saund., Can. Ent., 1, 93, 1869 *; Scud., Am. Nat., 10, 392, 602, 1876 *; Fern., But. Me., 59, 1884 *.

var. ATE, Str., Cat., 137, 1878.

Hab.—N. Am. generally.

225. **Carye,** Hüb., Samml. Ex. Schmett., 1, 1806–1816; Behr, Pr. Cal. Ac. N. Sci., 3, 125, 1864 *; H. Edw., l. c., 5, 329, 1874 *.

Hybrid bet. *Carye* and *Atalanta*, H. Edw., Pr. Cal. Ac. N. Sci., 1876.

Hab.—Cala. to Chili.; Ariz.; Nev.

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JUNONIA, Doubleday.

226. **Cœnia,** Hüb., Samml. Ex. Schmett., 2, 1816–1824; Bd.-Lec., 182, pl. 49, 1832 *; Morr., 61, 1862; Sprague, Can. Ent., 12, 100, 1880; Fern., But. Me., 60, 1884 *.
Lavinia, Harr. (not Cram.), 293, 1862.
var. ORYTHIA, Sm.-Abb., pl. 8, 1797 *.
Hab.—Mid. and South. St. to Pac.; occasl. Mass.; Me.; Ont.

227. **Genoveva,** Cram., 4, pl. 290, figs. E, F, 1782.
Hab.—Ariz. southward.

ANARTIA, Doubleday.

228. **Jatrophæ,** Linn., Mus. Lud. Ulr., 289, 1764; Cram., 3, pl. 202, figs. E, F, 1782; Morr., 62, 1862.
Hab.—Texas; Fla.

EUREMA, Boisduval.

229. **Lethe,** Fab., Ent. Syst., 3, 80, 1793; Don., Ins. Ind., pl. 23, fig. 1, 1800.
Hab.—Texas, occasl.

EUNICA, Felder.

230. **Monima,** Cram., 4, 387, figs. F, G, 1782.
Hyperipte, Edw., Syn. (not Hüb.)
Hab.—Texas; Fla.

TIMETES, Boisduval.

231. **Coresia,** Godt., Enc. Meth., 9, 359, 1823; Edw., Pr. Ent. Soc. Phil., 1, 224, 1862.
Hab.—Texas, occasl.

232. **Petreus,** Cram., 1, 87, figs. D, E, 1779.
Eleucha, Edw., Syn. (not Hüb.)
Hab.—Indian River, Fla. (by Wittfeld)

233. **Eleucha,** Doubl.-Hew., Gen. Di. Lep., pl. 23, fig. 3, 1847.
Hab.—Texas, occasl.

234. **Chiron,** Fab., Syst. Ent., 452, 1775.
Marius, Cram., 3, pl. 200, figs. D, E, 1780.
Hab.—Texas, occasl.

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DIADEMA, Boisduval.*

235. **Misippus**, Linn., Mus., Ulr., 264, 1764; id., Syst. Nat., 1, 2, 767, 1767.

♂ *Bolina*, Dru. (not Linn.) 1, pl. 14, 1773; Edw., Papilio, 1, 30, 1881.

Hab.—Indian River, Fla., occasl. (by Wittfeld.)

LIMENITIS, Fabricius.

236. **Ursula**, Fab., Ent. Syst., 3, 82, 1793; Sm.-Abb., pl. 10, 1797 *; Bd.-Lec., 199, pl. 53, 1833 *; Edw., Can. Ent., 13, 242, 1881 *.

Astyanax, Fab., Syst. Ent., 447, 1775.

Ephestion, Stoll., Supplt. Cram., pl. 25, 1790; Harr., 283, 1862 *.

Hab.—Atl. St.; Miss. Valley; Kans.; Ont.

var. ARIZONENSIS, Edw., Papilio, 2, 22, 1882.

Hab.—Ariz.

237. **Arthemis**, Dru.

1. dimorphic form LAMINA, Fab., Ent. Syst., 3, 118, 1793; Edw., But., 2, pl. 1 of Limen., 1879.

Arthemis, Dru., 2, 10, 1773; Say, 2, 23, 1825; Bd.-Lec., 202, pl. 54, 1833; Harr., 283, pl. 1, 1862; Sprague, Can. Ent., 12, 100, 1880; Fern., But. Me., 60, 1884 *.

aberr. C, Edw., Papilio, 2, 47, 1882.

2. dimorphic form PROSERPINA, Edw., Pr. E. Soc. Phil., 5, 148, 1865; id., Tr. A. E. Soc., 1, 285, pl. 4, 1867; id., Can. Ent., 5, 232, 1873, 9, 114, 1877 *; l. c., 13, 237, 1880; id., But., 1, 127, pl. 41, 1868; l. c., 2, pl. 1 of Limen., 1879 *.

Hab.—North. U. S.; Br. Am. to Fort Simpson; Br. Col.; Ont.; Queb.; N. Sco.

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* It is true, the name DIADEMA is pre-occupied (in Crustacea), and by Rule 10, Zool. Nom., should be changed; but the only name as yet suggested is Hypolimnas, used by Kirby, Cat., and called Hypolimnas, Hübner. That will not do at all. The name was one of Hübner's coitus names, and a coitus is not a genus. It is used by Hübner for a group of which "the fore wings are white spotted, *the hind wings pale banded*, and this does not apply to *Misippus*; and finally Kirby has not "clearly defined" it, as Rule 12 says must be done to make a genus name admissable. Had he defined it, it would have been Hypolimnas Kirby, not Hübner. So I retain Diadema.

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238. **Weidemeyerii,** Edw., Pr. Ac. N. Sci. Phil., 1861, 162; id., But., 1, 129, pl. 42, 1869; Morr., 527, 1862; Mead, Rep. Wheeler Exp., 5, 770, pl. 38, 1875.
Hab.—Rocky Mts., Mont. to N. Mex.; Ariz.; Utah; Fort Niobrara, Neb.

aberr. SINE-FASCIA, Edw., Papilio, 2, 22, 1882.
Hab.—Ariz.

239. **Disippus,** Godt., Enc. Meth., 9, 393, 1823; Bd.-Lec., 204, pl. 55, 1833 *; Harr., 281, fig. 109, 1862; Lintn., Pr. E. Soc. Phil., 3, 63, 1864 *; Riley, third Mo. Ent. Rep., 153, 1871 *; id., Can. Ent., 3, 52, 1871 *; Edw., Can. Ent., 11, 224, 1879 *; Fern., But. Me., 63, 1884 *.
aberr. Edw. (from effect of cold), Psyche, 3, 174, 1881.
Misippus, Pack. (not Linn.), Guide, 261, fig. 189, 1869.
Hab.—U. S. generally; Ont. to N. Sco.; Br. Am. to lat. 52°.

var. FLORIDENSIS, Str., Cat., 143, 1878 (see Str., Can. Ent., 13, 29, 1881; Mead, l. c., 13, 79, 1881; Edw., Papilio, 4, 62, 1884).
Hab.—South. St.; Ill.

aberr. —— Mead, ♀, Can. Ent., 4, 217, 1872.
PSEUDODORIPPUS, Str., Cat., 143, 1878.
Hab.—Catskill Mts., N. Y.

240. **Eros,** Edw., Can. Ent., 12, 246, 1880 *; id., But., 2, pl. 2 of Limen., 1883 *.
Hab.—Fla.; Ga.

var. OBSOLETA, Edw., 2, 22, 1882.
Hab.—Ariz.

241. **Hulstii,** Edw., Papilio, 2, 46, 1882.
Hab.—Utah.

242. **Lorquini,** Bd., Ann. Ent. Soc. Fr., 2, 10, 301, 1852; Morr., 66, 1862; Edw., But., 1, 131, pl. 43, 1870; Mead, Rep. Wheeler Exp., 5, pl. 38, 1875; H. Edw., Pr. Cal. Ac. N. Sci., 5, 330, 1874.
Hab.—Cala. to W. Terr.; Ariz.; Nev.; Vanc. Isld.; Br. Am., Crow's Nest (by Geddes).

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HETEROCHROA, Boisduval.

243. **Californica,** Butl., Pr. Zool. Soc. Lond., 485, 1865; Mead, Rep. Wheeler Exp., 5, 770, pl. 38, 1875; H. Edw., Pr. Cal. Ac. N. Sci., 5, 171, 1873 *.

Eulalia, Doubl.-Hew., Gen. Di. Lep., pl. 36, fig. 1, 1850; Edw., Pr. Ac. N. Sci. Phil., 225, 1862; Behr, Pr. Cal. Ac. N. Sci., 3, 127, 1864.

Bredowii, Edw. (not Hüb.), But., 1, 133, pl. 44, 1870.

Hab.—Cala.; Ariz.; Nev.

APATURA, Fabricius.

244. **Celtis,** Bd.-Lec., 210, pl. 57, 1833; Edw., But., 2, pl. 1 of Apat., 1875 *.

Lycaon, Riley (not Fab.), sixth Mo. Ent. Rep., 137, 1874 *.

Hab.—Va. to Gulf Mex.; Miss. Valley.

245. **Antonia,** Edw., Field and Forest, 3, 103, 1877.

Hab.—Texas.

var. MONTIS, Edw., Papilio, 2, 7, 1882.

Hab.—Ariz.; Col.

246. **Leilia,** Edw., ♂, Tr. A. E. Soc., 5, 103, 1874; id., ♂, But., 2, pl. 1 of Apat., 1875; id., ♀, Papilio, 2, 23, 1882.

Hab.—Ariz.

247. **Alicia,** Edw., But., 1, 135, pl. 45, 1868; id., Psyche, 3, 123, 1880 *.

Hab.—Gulf St., Fla. to Texas.

248. **Clyton,** Bd.-Lec., 208, pl. 56, 1833.

Herse, Riley (not Fab.), sixth Mo. Ent. Rep., 140, 1874 *.

1. dimorphic form PROSERPINA, Scud., Tr. Ac. N. Sci. Chic., 1, 332, 1869; Edw., But., 2, pl. 2 of Apat., 1876.
2. dimorphic form OCELLATA, Edw., l. c., pl. cit., 1876.

Hab.—N. Y. to Gulf Mex.; Miss. Valley; Kans.

249. **Flora,** Edw., But., 2 (in *Clyton*), 1876; id., Can. Ent., 13, 81, 1881 *.

Hab.—Fla.; Texas.

250. **Cocles,** Lintn. MSS.

Hab.—Rio Grande, Texas.

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PAPHIA, Westwood.

251. **Troglodyta,** Fab., Syst. Ent., 502, 1775.
Astinax, Cram., 4, 337, figs. A, B, 1782.
Glycerium, Edw. (not Doubl.), But., 1, 137, pl. 46, 1871 ∗; Riley, second Mo. Ent. Rep., 125, 1870 ∗.
Andria, Scud., Buff. Bull., 2, 248, 1875.
Hab.—West. St., from Ill. to Texas; Neb.

252. **Morrisonii,** Edw., Papilio, 3, 8, 1883.
Hab.—Mt. Graham, Ariz.; Mex.

SATYRINÆ.

DEBIS, Westwood.

253. **Portlandia,** Fab., Sp. Ins., 2, 82, 1781; Bd.-Lec., 226, pl. 58, 1833; Edw., Can. Ent., 14, 84, 1882 ∗; Fern., But. Me., 70, 1884 ∗.
Andromacha, Hüb., Samml. Ex. Schmett., 1, 1806–1816; Morr., 78, 1862.
Hab.—Me. to Rocky Mts. and to Gulf Mex.; Br. Am. to Lat. 50°.

NEONYMPHA, Westwood.

254. **Canthus,** Bd.-Lec., pl. 60, 1833; Morr., 74, 1862; Edw., Can. Ent., 15, 64, 1883 ∗.
Boisduvalli, Harr., 305, fig. 128, 1862; Fern., But. Me., 68, 1884 ∗.
Hab.—North. States; Ont.; Queb.

255. **Gemma,** Hüb., Zutr., Ex. Schmett., 1, figs. 7, 8, 1818; Bd.-Lec., pl. 62, 1833 ∗; Morr., 73, 1862; Edw., Can. Ent., 11, 31, 1879 ∗.
Hab.—W. Va. to Gulf Mex.

256. **Henshawi,** Edw., Tr. A. E. Soc., 5, 205, 1876; id., l. c., 9, 7, 1881.
Hab.—Ariz.; So. Col.: N. Mex.

257. **Areolatus,** Sm.-Abb., 1, pl. 13, 1797 ∗; Bd.-Lec., pl. 63, 1833 ∗; Morr., 74, 1862; Edw., Can. Ent., 14, 163, 1882 ∗.
Hab.—Gulf St.; occasl. N. J.

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258. **Eurytris,** Fab., Ent. Syst., 3, 157, 1793; Bd.-Lec., pl. 61, 1833 *; Morr., 73, 1862; Harr., 306, fig. 129, 1862; Saund., Can. Ent., 2, 139, 1870 *; Edw., Can. Ent., 10, 125, 1878 *; Fern., But. Me., 66, 1884 *.
Hab.—Atl. St.; Miss. Valley; Neb.; Ont.; Queb.

259. **Sosybius,** Fab., Ent. Syst., 3, 219, 1793; Bd.-Lec., pl. 63, 1833 *; Morr., 74, 1862; Edw., Can. Ent., 9, 229, 1877 *.
Hab.—Mid. and South. St.; Miss. Valley.

260. **Rubricata,** Edw., Tr. A. E. Soc., 3, 212, 1871.
Hab.—Texas; Ariz.

CŒNONYMPHA, Westwood.

261. **California,** West.-Hew., Gen. Di. Lep., 398, pl. 67, 1851.
Californius, Bd., Ann. Soc. Ent. Fr., 2, 10, 309, 1852.
var. CERES, Butl., Ent. Mo. Mag., 3, 78, 1866.
var. GALACTINUS, Bd., l. c., 2, 10, 309, 1852.
var. ERYNGII, H. Edw., Pr. Cal. Ac. N. Sci., 6, 1877.
var. PULLA, H. Edw., Papilio, 1, p. 51, 1881.
Hab.—Cala; Mont.

262. **Elko,** Edw., Can. Ent., 13, 57, 1880.
Hab.—Elko, Nev.; Spokane Falls, W. Terr.

263. **Inornata,** Edw., Pr. Ac. N. Sci. Phil., 1861, 163; Morr., 328, 1862.
Hab.—Mont.; Br. Am.; N. F'land.

264. **Ochracea,** Edw., l. c., 1861, 163; Morr., 328, 1862.
Hab.—Mont. to Ariz.; Kans.; Br. Am.

265. **Ampelos,** Edw., Tr. A. E. Soc., 3, 213, 1871.
Hab.—Oreg.; W. Terr.; Nev.; Mont.

266. **Kodiak,** Edw., l. c., 2, 375, 1869.
Hab.—Kodiak, Alaska.

267. **Brenda,** Edw., l. c., 2, 375, 1869.
Hab.—Los Angelos, Cala.

268. **Pamphiloides,** Reak., Pr. E. Soc., Phil., 6, 146, 1866.
Hab.—Cala.; Br. Am.

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EREBIA, Dalman.

269. **Fasciata,** Butl., Cat. Satyr., Br. Mus., 92, pl. 2, fig. 8, 1868.
Hab.—Alaska; Boreal Am.

270. **Discoidalis,** Kirby, Faun. Bor. Am., 4, 298, pl. 3, figs. 2, 3, 1837; Morr., 75, 1862.
Hab.—Boreal Am.

271. † **Vesagus,** Doubl.-Hew., Gen. Di. Lep., 380, pl. 64, 1851.
Hab.—Br. Am. (loc. unknown)

272. **Rossii,** Curt., App. Ross. Exp., 67, pl. A, fig. 7, 1835.
Hab.—Boreal Am.

273. **Disa,** Thunb.
var. MANCINUS, Doubl.-Hew., Gen. Di. Lep., 380, pl. 54, 1851.
Hab.—Alaska; Rocky Mts., Br. Am.

274. **Haydenii,** Edw., Rep. Hayden Exp., 1872, 467; id., Tr. A. E. Soc., 5, 19, 1874.
Hab.—Mont.

275. **Tyndarus,** Esp.
var. *Callias*, Edw., Tr. A. E. Soc., 3, 274, 1871; Mead, Rep. Wheeler Exp., 5, 775, 1875.
Hab.—Col.; N. Mex.

276. **Epipsodea,** Butl., Cat. Satyr. Br. Mus., 80, pl. 2, 1868.
Rhodia, Edw., Tr. A. E. Soc., 3, 273, 1871.
Hab.—Col.; N. Mex.; Mont.; W. Terr.; Br. Am.; St. Michaels, Alaska.

277. † **Sofia,** Str., Br. Bull., 3, 35, 1880.
Hab.—Fort Churchill, Br. Am.

278. † **Magdalena,** Str., l. c., 3, 35, 1880.
Hab.—Col.

GEIROCHEILUS, Butler.

279. **Tritonia,** Edw., Tr. A. E. Soc., 5, 18, 1874.
Hab.—So. Ariz.

HIPPARCHIA, Fabricius.

280. **Ridingsii,** Edw., Pr. E. Soc. Phil., 4, 201, 1865; Str., Lep., pl. 4, fig. 6, ♀, 1873; Mead, Rep. Wheeler Exp., 5, 774, 1875.
Stretchii, Edw. (Chion.), Tr. A. E. Soc., 3, 192, 1870.
Hab.—Col.; Nev.; Mont.

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281. **Dionysius,** Scud., Hayden Bull., 4, 254, 1878.
Ashtaroth, Str., Lep., Pt. 14, 129, 1878.
Hab.—Utah.

SATYRUS, Westwood.

Group I.

282. **Pegala,** Fab., Syst. Ent., 494, 1775; Morr., 77, 1862; Edw., Pr. E. Soc. Phil., 6, 195, 1866; id., Can. Ent., 12, 51, 1880.
Pegale, Smith, Br. Bull., 6, 128, 1884.
Hab.—Gulf St.; occasl. to N. J., on coast; Mt. Holly, N. J.

283. **Alope,** Fab.

1. dimorphic form ALOPE, Fab., Ent. Syst., 3, 229, 1793; Bd.-Lec., 228, pl. 59, 1833; Harr., 305, fig. 127, 1862; Edw., Pr. E. Soc. Phil., 6, 196–200, 1866; id., Can. Ent., 12, 24, 1880 *; id., But., 2, pl. 2 of Satyr., 1882 *; Smith, Br. Bull., 6, 127, 1884; Fern., But. Me., 72, 1884 *.

Hab.—N. Y. to N. C.; N. Bruns.

var. TEXANA, Edw., Can. Ent., 12, 24, 1880; id., But., 2, pl. cit., 1882.

Hab.—Texas.

var. MARITIMA, Edw., Can. Ent., 12, 23, 1880; id., But., 2, pl. cit., 1882.

Hab.—Martha's Vineyard; L. I.; east N. J.; Grand Manan Island, N. B. (by Lyman)

2. dimorphic form NEPHELE, Kirby, Faun. Bor. Amer., 4, 297, 1837; Edw., Can. Ent., 12, 21, 1880 *; id., But., 2, pl. 3 of Satyr., 1882 *; Smith, Br. Bull., 6, 129, 1884.

Hab.—Ont.; Queb.; Br. Am.; N. E.; N. Y.

var. OLYMPUS, Edw., Can. Ent., 12, 31, 1880; id., But. 2, pl. 3 of Satyr., 1882 *.

Hab.—Ill. to Rocky Mts.; Br. Am.

var. BOOPIS, Behr, Pr. Cal. Ac. N. Sci., 3, 164, 1863; Edw., Can. Ent., 12, 54, 1880.

Hab.—Cal. to W. Terr.

sub. var. INCANA, Edw., Can. Ent., 12, 91, 1880.

Hab.—W. Terr.

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284. **Ariane,** Bd., Ann. Soc. Ent. Fr., 2, 10, 307, 1852; Morr., 77, 1862; Edw., Can. Ent., 12, 90, 1880.
Hab.—Cal.; Weber Mts., Utah.

285. **Baroni,** Edw., Can. Ent., 12, 91, 1880.
Hab.—North. Cal.

286. **Paulus,** Edw., Can. Ent., 11, 50, 1879; id., l. c., 12, 54, 1880; Smith, Br. Bull., 6, 132, 1884.
Hab.—Cal,; Sierra Nev., San Bern.; Nev.

287. **Gabbii,** Edw., Tr. A. E. Soc., 3, 193, 1870; id., Can. Ent., 12, 92, 1880.
Hab.—Oreg.; Weber Mts., Utah.

288. **Wheelerii,** Edw., Tr. A. E. Soc., 4, 343, 1873; id., But., 2, pl. 1 of Satyr., 1877; Mead, Rep. Wheeler Exp., 5, 751, pl. 39, 1875.
Hoffmani, Str., Lep., pl. 4, ♀, 1873, pl. 8, ♂, 1874.
Hab.—Apache, Ariz.; Owen's Lake, So. Cal.; So. Utah.

289. **Meadii,** Edw., Tr. A. E. Soc., 4, 70, 1872; id., Can. Ent., 12, 94, 1880; Mead, Rep. Wheeler Exp., 5, 774, 1875; Smith, Br. Bull., 6, 131, 1884.
Hab.—Mont. to Ariz.

290. **Silvestris,** Edw., Pr. Ac. N. Sci. Phil., 1861, 162; Morr., 327, 1862.
Phocus, Edw., Tr. A. E. Soc., 5, 14, 1875.
Hab.—Cal.; Br. Col.

291. **Oetus,** Bd., Lep. de la Cal., 63, 1869.
Silvestris, Edw., Can. Ent., 12, 93, 1880.
Hab.—North. Cal.

292. **Charon,** Edw., Tr. A. E. Soc., 4, 69, 1872; id., Can. Ent., 12, 94, 1880; Mead, Rep. Wheeler Exp., 5, 773, 1875 *.
Hab.—N. Mex. to Mont.; Br. Am.

Group II.

293. **Sthenele,** Bd., Ann. Soc. Ent., Fr., 2, 10, 308, 1852; Morr., 77, 1862; Edw., Can. Ent., 12, 92, 1880.
Hab.—San Francisco (believed to be now extinct).

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CHIONOBAS, Boisduval.

Group I.

294. **Gigas,** Butl., Cat. Satyr., Br. Mus., 161, pl. 2, 1868; Edw., But., 2, pl. 1 of Chion., ♀, 1874, pl. 2, ♂, 1875.
Hab.—Vanc. Isld.

295. **Iduna,** Edw., But., 2, pl. 1 of Chion., 1874.
Hab.—Mendocino, Cal.

296. **Californica,** Bd., Lep. de la Cal., 62, 1869; Edw., But. 2, pl. 2 of Chion., 1875.
Hab.—Mt. Hood, Oreg.

297. † **Nevadensis,** Feld., Reise Nov. Lep., 3, 89, pl. 69, 1867.
Hab.—Cal.

298. **Chryxus,** West.-Hew., Gen. Di. Lep., 383, pl. 64, 1851; Mead, Rep. Wheeler Exp., 5, 777, 1875.
Hab.—Col. to Br. Am., Rocky Mts.

299. **Calais,** Scud., ♀, Pr. E. Soc. Phil., 5, 7, 1865; Edw., Can. Ent., 15, 44, 1883.
Taygete, Edw. (not Hüb.), Pr. Ac. N. Sci. Phil., 1862, 57.
Hab.—Rupert House, Hudson's Bay; N. F'land.

300. **Ivallda,** Mead, Can. Ent., 10, 196, 1878; Edw., But., 2, pl. 4 of Chion., 1879.

Hab.—Nev.; East. Cal.

Group II.

301. **Varuna,** Edw., Can. Ent. 14, 2, 1882.
Hab.—Dak.; Calgarry, Br. Am. (by Geddes)

302. **Uhleri,** Reak., Pr. E. Soc. Phil., 6, 143, 1866; Str., pl. 4, fig. 5, ♂, 1873; Mead, Rep. Wheeler Exp., 5, 776, 1875.
Hab.—Col.; Mont.

303. † **Tarpeia,** Esp., Eur. Schmett., 1, pl. 83, 1783; Butl., Cat. Satyr., Br. Mus., 161, 1868.
Hab.—Arctic Am. (auct. Butler)

Group III.

304. **Taygete,** Hüb., Samml. Ex. Schmett., 1816–1824; Möschl., Wien. Ent. Monat., 7, 213, 1863.
Bootes, Bd., Icon., 191, pl. 37, 1862.
Hab.—Lab.; Alaska.

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305. **Jutta**, Hüb., Eur. Schmett., 1, figs. 614, 615, 1800–1823; Scud., Pr. E. Soc. Phil., 5, 3, 1865; Fern., But. Me., 75, 1884.
Balder, Hüb., Zutr. Ex. Schmett., figs. 981, 982, 1837; Bd., Icon., pl. 39, 1832.
Hab.—Queb.; Hudson's Bay; Lab.; Orono, Me.

306. **Semidea**, Say, Am. Ent., 3, pl. 50, 1828; Harr., 304, fig. 126, 1862; Scud., Pr. Bost. Soc. N. Hist., 7, 221, pl. 14. 1863 *; id., Pr. E. Soc. Phil., 5, 20, 1865.
Oeno, Bd., Icon., 195, pl. 39, 1832.
Also, Bd., l. c., 197, pl. 40, 1832.
Hab.—White Mts., N. H.; Labr.; Ungava Bay; Quickstep Harbor, Gulf of Cumberland.

307. **Crambis**, Frey., Neu. Beitr., 5, 99, pl. 400, 1845.
Also, Möschl. (not Bd.), Wien. Ent. Monat., 7, 205, 1863.
Oeno, Scud. (not Bd.), Pr. E. Soc. Phil., 5, 13, 1865.
Assimilis, Butl., Cat. Satyr. Br. Mus., 163, pl. 2, fig. 10, 1868.
Semidea, Mead (not Say), Rep. Wheeler Exp., 5, 776, 1875.
Hab.—Labr.; Boreal Am.; Alaska; Col.; N. Mex.

308. **Subhyalina**, Curt., App. Ross Exp., 68, 1835.
Hab.—Arctic Am.

LIBYTHEINÆ.

LIBYTHEA, Fabricius.

309. **Bachmanni**, Kirtl., Sill. Jl., 2, 13, 336, 1852; Saund., Can. Ent., 1, 25, fig. 1, 1868; Edw., But., 2, pl. 1 of Liby., 1874 *; id., Can. Ent., 13, 226, 1881 *.
Hab.—Atl. St.; Miss. Valley; Texas; Ariz.; Ont.

310. **Carinenta**, Cram., 2, 108, figs. E, F, 1779.
Larvata, Str., Lep., Pt. 14, 1878.
Hab.—Texas; N. Mex.; Ariz.

ERYCINIDÆ.

ERYCININÆ.

LEMONIAS, Westwood.

Group I.

311. **Mormo**, Feld., Wien. Ent. Monat., 3, 271, 1859; id., Reise Nov., Lep., 2, 303, pl. 37, 1865; Morr., 104, 1862.

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Dumeti, Behr., Pr. Cal. Ac. N. Sci., 3, 178, 1865.
Mormonia, Bd., Lep. de la Cala., 52, 1869.
Hab.—Cal.; Utah; Ariz.; N. Mex.

312. **Duryi**, Edw., Papilio, 2, 47, 1882.
Hab.—N. Mex.

313. **Cythera**, Edw., Tr. A. E. Soc., 4, 345, 1873; Mead, Rep. Wheeler Exp., 5, 786, p.. 36, 1875.
Hab.—Ariz.

314. **Virgulti**, Behr., Pr. Cal. Ac. N. Sci., 3, 178, 1865.
Sonorensis, Feld., Reise Nov., Lep., 2, 303, 1865.
Hab.—So. Cala.

315. **Nais**, Edw. (Chrysophanus), Tr. A. E. Soc., 5, 291, 1876; id., But., 2, pl. 1 of Lemon., 1883.
Hab.—Ariz.; N. Mex.; Col.

316. **Palmerii**, Edw., Tr. A. E. Soc., 3, 195, 1870; id., But., 2, pl. 1 of Lemon., 1883.
Hab.—Utah; Ariz.

Group II.

317. **Ares**, Edw., Papilio, 2, 136, 1882.
dimorphic form CLEIS, Edw., l. c., 2, 137, 1882.
Hab.—So. Ariz.

EURYGONA, Boisduval.

318. **Abreas**, Edw., Tr. A. E. Soc., 9. 3, 1881.
Hab.—So. Ariz.

CALEPHELIS, Grote and Robinson.

319. **Cænius**, Linn., Syst. Nat., 1, 2, 796, 1767.
Pumila, Bd.-Lec., 131, pl. 37, 1833; Morr., 104, 1862.
Hab.—South. St.

320. **Borealis**, Gr.-Rob., Ann. N. Y. Lyc. N. Hist., 8, 351, 1866.
Hab.—N. Y.; N. J.; W. Va.; Mich.; Ill.

321. **Australis**, Edw., Field and Forest, 3, 87, 1877.
Guadeloupe, Str., Lep., Pt. 14, 1878.
Hab.—So. Texas; Ariz.

322. **Nemesis**, Edw., Tr. A. E. Soc., 3, 212, 1871.
Hab.—Ariz.; So. Cala.

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EUMENIA, Latreille.

323. **Atala,** Poey, Cent. Lep. Cuba, pl. 2, 1832; Scud., Mem. Bost. Soc. N. Hist., 413, pl. 14, 1875.
Toxea, Gray, Griff. Anim. Kingd., 15, pl. 43, 1833.
Hab.—Fla.

LYCÆNIDÆ.

LYCÆNINÆ.

THECLA, Fabricius.

Group I.

324. **Grunus,** Bd., Ann. Soc. Ent. Fr., 2, 10, 289, 1852; id., Lep. de la Cal., 43, 1869.
Hab.—No. and So. Cala.; Nev.

Group II.

325. **Chrysalus,** Edw., Tr. A. E. Soc., 4, 344, 1873.
var. CITIMA, H. Edw., Papilio, 1, 53, 1881.
Hab.—So. Col.

326. **Halesus,** Cram., 2, 98, figs. B, C, 1779; Bd.-Lec., 83, pl. 25, 1833 *; Morr., 91, 1862.
Dolichos, Hüb., Zutr. Ex. Schmett., figs. 219, 220, 1823.
Juanita, Scud., Pr. Bost. Soc. N. Hist., 11, 435, 1868.
Hab.—Gulf St.; Ill.; Nev.; Cala.; Ariz.

327. **M Album,** Bd.-Lec., 86, pl. 26, 1833 *; Morr., 92, 1862.
Psyche, Bd.-Lec., 88, pl. 27, 1833.
Hab.—Gulf St.; Va.; Pa.; Ohio.

Group III.

328. **Favonius,** Sm.-Abb., 1, pl. 14, 1797 *.
Hab.—Gulf St.; S. C.

329. **Autolycus,** Edw., Tr. A. E. Soc., 3, 271, 1871.
Hab.—Texas; Mo.

330. **Alcestis,** Edw., l. c., 3, 271, 1871.
Hab.—Texas; Mt. Graham, Ariz.

331. **Humuli,** Harr., 276, pl. 4, fig. 3, 1862; Fern., But. Me., 76, 1884 *.
Favonius, Bd.-Lec. (not Sm.-Abb.), 95, pl. 30, 1833 *; Morr., 95, 1862.
Hyperici, Bd.-Lec., 90, pl. 28, 1833.
Hab.—Atl. St.; Miss. Valley; Mont.

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332. **Melinus,** Hüb., Zutr. Ex. Schmett., figs. 121, 122, 1818; Bd., Ann. Soc. Ent. Fr., 2, 10, 287, 1852.
var. PUDICA, H. Edw., Pr. Cal. Ac. N. Sci., 6, 1876.
Hab.—Cala.; Nev.; Ariz.

333. **Acadica,** Edw., Pr. Ac. N. Sci. Phil., 1862, 55; id., But., 1, 142, pl. 48, 1869; Saund., Can. Ent., 1, 95, 1869 *.
Souhegan, Whitn., Pr. Bost. Soc. N. Hist., 12, 162, 1868.
Hab.—Ont.; Queb.; North. St.; Mont.; Nev.; Ariz.

334. **Californica,** Edw., Pr. Ac. N. Sci. Phil., 1862, 223.
Borus, Bd., Lep. de la Cal., 43, 1869.
var. CYGNUS, Edw., Tr. A. E. Soc., 3, 207, 1871.
Hab.—Nev.; Cala. to Vanc. Isld.

335. **Itys,** Edw., Papilio, 2, 23, 1882.
Hab.—Ariz.

336. † **Auretorum,** Bd., Ann. Soc. Ent. Fr., 2, 10, 288, 1852.
Hab.—Cala (this species remains unknown to American collectors).

337. **Dryope,** Edw., Tr. A. E. Soc., ♀, 3, 19; ♂, 3, 93, 1870.
Hab.—Cala.; Nev.; Utah.

338. † **Sylvinus,** Bd., Ann. Soc. Ent. Fr., 2, 10, 287, 1852.
Hab.—Cala (this species has not been identified by American collectors).

339. **Edwardsii,** Saund., Can. Ent., 1, 99, 1869; Gr.-Rob., Tr. A. E. Soc., 1, 172, 1867.
Falacer, Harr. (not Godt.), 276, 1862.
Calanus, Gr.-Rob. (not Hüb.), l. c. 1, 173, 1867.
Hab.—Ont.; Queb.; Br. Am.; Me. to Neb.; Col.

340. **Wittfeldii,** Edw., Can. Ent., 15, 136, 1883.
Hab.—Indian River, Fla.

341. **Calanus,** Hüb., Samml. Ex. Schmett., 1, 1806–1824; Fern., But. Me., 78, 1884.
Falacer, Godt., Enc. Meth., 9, 633, 1819; Bd.-Lec., 92, pl. 29, 1833 *; Morr., 95, 1862.
Inorata, Gr.-Rob., Tr. A. E. Soc., 1, 323, 1868.
Hab.—Atl. and West. St.; Texas; Col.; N. Mex.; Ont.; Queb.
var. LORATA, Gr.-Rob., l. c., 1, 171, 1867.
Hab.—W. Va.

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342. **Ontario,** Edw., Tr. A. E. Soc., 2, 209, 1868; id., But., 1, 145, pl. 48, 1869.
Hab.—Ont.; N. E.

343. **Strigosa,** Harr., 276, 1862; Edw., But., 1, 146, pl. 48, 1869; Saund., Can. Ent., 1, 99, 1869 *; Fern., But. Me., 77, 1884 *.
Liparops, Scud. (not Bd.-Lec.), Buff. Bull., 3, 111, 1876.
Hab.—Atl. St.; Miss. Valley; Mont.; Col.; Ont.; Queb.

344. **Putnami,** H. Edw., Pr. Cal. Ac. N. Sci., 6, 1876.
Hab.—Spring Lake, Utah.

345. **Spadix,** H. Edw., Papilio, 1, 53, 1881.
Hab.—So. Cala.

346. **Tetra,** Behr., in Edw., Tr. A. E. Soc., 3, 19, 1870.
Hab.—Cala.

347. **Chalcis,** Behr., in Edw., l. c., 2, 376, 1879.
Hab.—Cala.; Utah.

348. **Sæpium,** Bd., Ann. Soc. Ent. Fr., 2, 10, 288, 1852; Morr., 99, 1862.
var. FULVESCENS, H. Edw., Pr. Cal. Ac. N. Sci., 6, 1876.
Hab.—Cala., W. Terr.; Utah; Nev.; Col.

349. **Nelsoni,** Bd., Lep. de la Cala., 43, 1869.
var. EXOLETA, H. Edw., Papilio, 1, 53, 1881.
var. MUIRII, H. Edw., l. c., 1, 53, 1881.
Hab.—Big Trees and Mendicino, Cala.

350. **Adenostomatis,** H. Edw., Pr. Cal. Ac. N. Sci., 6, 1876.
Hab.—No. and So. Cala.

351. **Tacita,** H. Edw., Papilio, 1, 54, 1881.
Hab.—Mt. Shasta, Cala.

352. **Spinetorum,** Bd., in Hew., Ill., Pt. 3, figs. 198, 199, 1867; id., Lep. de la Cala., 42, 1869.
Ninus, Edw., Tr. A. E. Soc., 3, 20, 1871.
Hab.—No. Cala. to W. Terr.; Col.

353. **Siva,** Edw., Tr. A. E. Soc., 5, 110, 1874.
Hab.—Ariz.

354. **Castalis,** Edw., l. c., 3, 208, 1871.
Hab.—Texas.

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355. **Smilacis,** Bd.-Lec., 107, pl. 33, 1833 *; Morr., 98, 1862.
Auburniana, Harr., 277, 1862.
Hab.—Atl. and West. St.; N. W. Texas; Point Pelee, Ont. (auct. Saunders)

356. **Acis,** Dru., 1. pl. 1, 1773; Cram., 2, pl. 175, figs. C, D, 1779; Morr., 101, 1862.
Hab.—Key West, Fla.

357. **Poeas,** Hüb., Samml. Ex. Schmett., 1, 1806–1824; Bd.-Lec., 111, pl. 35, 1833; Morr., 103, 1862.
Hab.—South. St.; W. Va.; Ky.; Ind.

358. **Columella,** Fab., Ent. Syst., 3, 1, 282, 1793.
Eurytulus, Hüb., Samml. Ex. Schmett., 2, 1806–1824.
Modesta, Mayn., Am. Nat., 7, 178, 1873.
Ocellifera, Gro., Buff. Bull., 1, 78, 1873.
Hab.—Fla.; Texas; occasl. N. Y.

359. **Clytie,** Edw., Field and Forest, 3, 88, 1877; id., Papilio, 2, 24, 1882.
Hab.—San Antonio, Texas; Ariz.

360. **Leda,** Edw., Papilio, 2, 23, 1882.
Hab.—Ariz.

361. **Ines,** Edw., l. c., 2, 25, 1882.
Hab.—Ariz.

Group IV.

362. **Behrii,** Edw., Tr. A. E. Soc., 3, 18, 1870.
Kali, Str., Lep., Pt. 14, 129, 1878.
Hab.—Cala.; Nev.; Col.

363. **Augustus,** Kirby, Faun. Bor. Am., 4, 298, pl. 3, figs. 4, 5, 1837; Harr., 279, fig. 108, 1862; Morr., 103, 1862; Fern., But. Me., 79, 1884.
Hab.—Boreal Am.; Ont.; Queb.; East. St.

364. **Iroides,** Bd., Ann. Soc. Ent. Fr., 2, 10, 289, 1862; Morr., 100, 1862; H. Edw., Pr. Cal. Ac. N. Sci., June, 1878 *.
Hab.—Br. Col. to Ariz.

365. † **Fotis,** Str., Lep., Pt. 14, 129, 1878.
Hab.—Ariz.

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366. **Irus,** Godt, Enc. Meth., 9, 674, 1823; Bd.-Lec., 101, pl. 31, 1833; Morr., 97, 1862; Fern., But. Me., 80, 1884.
var. ARSACE, Bd.-Lec., 103, pl. 32, 1833.
var. MOSSII, H. Edw., Papilio, 1, 54, 1881.
Hab.—Atl. and West. St.; Vanc. Isld.

367. **Henrici,** Gr.-Rob., Tr. A. E. Soc., 1, 774, 1867; Edw., Papilio, 1, 150, 1881; Fern., But. Me., 80, 1884 *.
Hab.—W. Va.

368. **Eryphon,** Bd., Ann. Soc. Ent. Fr., 1, 10, 290, 1852; Morr., 1862.
Hab.—Cala.; Col.

369. **Niphon,** Hüb., Zutr. Ex. Schmett., figs. 203, 204, 1823; Fitch, 4th Rep. N. Y. Agr. Soc., 1858, p. 57 *; Morr., 97, 1862; Fern., But. Me., 82, 1884 *; Fletcher, Can. Ent., 16, 92, 1884 *.
Hab.—Atl. and West. St.; Col.; Ont.; Queb.; N. Sco.

370. **Affinis,** Edw., Pr. Ac. N. Sci., Phil., 1862, 223.
Hab.—Utah.

371. **Dumetorum,** Bd., Ann. Soc. Ent. Fr., 2, 10, 291, 1852; Morr., 100, 1862.
Viridis, Edw., Pr. Ac. N. Sci. Phil., 1862, 223.
Hab.—Cala.; Oreg.; Nev.

372. **Apama,** Edw., Papilio, 2, 137, 1882.
Hab.—Ariz.

373. **Sheridanii,** Edw., Field and Forest, 3, 48, 1877.
Hab.—Mont.

374. **Laeta,** Edw., Pr. Ac. N. Sci. Phil., 1862, 55; id., But., 1, 141, pl. 47, 1869; id., Papilio, 2, 8, 1883; Fern., But. Me., 83, 1884.
♀ *Clothilde*, Edw., Pr. E. Soc. Phil., 2, 15, 1863.
Hab.—Me. to W. Va.; Atlantic City, N. J.; Ariz.; Ont.; Queb.

375. **Fuliginosa,** Edw. (Lycæna), Pr. Ac. N. Sci. Phil., 1861, 164; Morr., 330, 1862.
Suasa, Bd., Lep. de la Cala., 51, 1869.
Hab.—Cala.; Lake Tahoe, Nev.

376. **Titus,** Fab., Ent. Syst., 3, 297, 1793; Fern., But. Me., 84, 1884 *.

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Mopsus, Hüb., Zutr., Ex. Schmett., figs. 135, 136, 1818; Bd.-Lec., 109, pl. 34, 1833 *; Morr., 102, 1862.

Hab.—N. E. to Ariz.; Ont.; Queb.; Old Man's River, Br. Am.

FENISECA, Grote.

377. **Tarquinius,** Fab., Ent. Syst., 3, 319, 1793; Fern., But. Me., 85, 1884.

Cratægi, Bd.-Lec., 128, pl. 37, 1833; Morr., 84, 1862.

Porsenna, Scud., Pr. Ess. Ins., 3, 163, 1863.

Hab.—Atl. St.; Miss. Valley; Ont.; Queb.; N. Sco.

CHRYSOPHANUS, Doubleday.

Group I.

378. **Arota,** Bd., Ann. Soc. Ent. Fr., 2, 10, 293, 1852; Morr., 86, 1862; Str., Lep., pl. 10, figs. 27, 28, 1874.

Hab.—Cala.

379. **Virginiensis,** Edw., Tr. A. E. Soc., 3, 21, 1870; St., Lep., pl. 10, figs. 21, 22, 1874.

Hab.—Cala.; Nev.; Col.

380. **Hermes,** Edw., l. c., 3, 21, 1870.

Hab.—Cala.; Nev.

Group II.

381. **Xanthoides,** Bd., Ann. Soc. Ent. Fr., 2, 10, 292, 1852; id., Lep. de la Cala., 45, 1869; Morr., 86, 1862; Str., Lep., pl. 10, figs. 12, 13, 1874.

Hab.—Cala.

382. **Dione,** Scud., Tr. Chic. Ac. Sci., 1, 330, 1869.

Hab.—Ia. to Kans.; Neb.; Mont.

383. **Editha,** Mead, Can. Ent., 10, 198, 1878.

Hab.—Lake Tahoe, Nev.

384 **Gorgon,** Bd., Ann. Soc. Ent. Fr., 2, 10, 292, 1852; Morr., 86, 1862; Str., Lep., pl. 10, fig. 17, 1874.

Hab.—Cala.; Nev.

385. **Thoe,** Bd.-Lec., 125, pl. 38, 1833; Morr., 84, 1862; Saund., Can. Ent., 1, 57, 1869 *; Bean, Can. Ent., 16, 68, 1884 *.

Hyllus, Edw. (not Cram.)

Hab.—Me. to Neb.; Ohio; Kans.; Col.; Ont.; Queb.

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Group III.

386. **Mariposa,** Reak., Pr. E. Soc. Phil., 6, 149, 1866; Str., Lep., pl. 10, figs. 25, 26, 1874.
Nivalis, Bd., Lep. de la Cala.; 44, 1869.
Hab.—Cala.; Col.; Mont.; Summit, Br. Am.

387. **Zeroe,** Bd., Lep. de la Cala., 45, 1869.
Ianthe, Edw., Tr. A. E. Soc., 3, 211, 1871; Str., Lep., pl. 10, figs. 23, 24, 1874.
Hab.—Cala.; Col.

388. **Helloides,** Bd., Ann. Soc. Ent. Fr., 2, 10, 291, 1852; Morr., 86, 1862; Mead, Rep. Wheeler Exp., 5, 780, 1875 *; Str., Lep., pl. 10, figs. 19, 20, 1874.
Castro, Reak., Pr. E. Soc. Phil., 6, 148, 1866.
Hab.—Mont. to Ariz.; Oreg.; Cala.

389. **Florus,** Edw., Can. Ent., 15, 210, 1883.
Hab.—Garrett's Ranche, Br. Am. (by Geddes)

390. **Dorcas,** Kirby, Faun. Bor. Am., 4, 299, pl. 4, 1837; Morr., 90, 1862.
Hab.—Kodiak, Alaska; Br. Am.; So. Labr.

391. **Epixanthe,** Bd.-Lec., 127, pl. 38, 1833; Harr., 274, 1862; Morr., 85, 1862; Fern., But. Me., 86, 1884.
Hab.—Br. Am.; Ont.; Queb.; N. F'land.; Me.; N. E.; Kans.

392. **Hypophleas,** Bd., Ann. Soc. Ent. Fr., 2, 10, 291, 1852; Scud., Buff. Bull., 3, 128, 1876.
Phleas, Bd.-Lec., 123, 1833.
Phleas var. *Americana*, D'Urban, Can. Nat., 5, 246, 1857.
Americana, Harr., 273, 1862; Fern., But. Me., 87, 1884 *.
aberr. FASCIATA, Str., Cat., 101, 1878.
Hab.—North., Mid., West. St.; Cala.; Br. Am. to Pac.; Ont.; Queb.; N. Sco.

var. FEILDENI, McLachl., Linn. Soc. Jl., pl. 14, 111, 1878.
Hab.—Arctic, Lat. 81° 45′.

Group IV.

393. **Cupreus,** Edw., Tr. A. E. Soc., 3, 20, 1870; id., But., 2, pl. 1 of Chrys., 1874.
Hab.—Shasta, Cala.; Oreg.

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394. **Snowi,** Edw., Tr. Kans. Ac. Sci., 7, 69, 1881.
Hab.—Col.

395. **Rubidus,** Behr, Pr. E. Soc. Phil., 6, 208, 1866; Edw., But., 2, pl. 1 of Chrys., 1874.
Hab.—Oreg.; Nev.; Mont.

396. **Sirius,** Edw., Tr. A. E. Soc., 3, 270, 1871; id., But, 2, pl. 1 of Chrys., 1874; Str., Lep., pl. 10, figs. 29, 30, 1874.
Hab.—Mont. to Ariz.; Fort Macleod, Br. Am. (by Geddes)

LYCÆNA, Fabricius.

Group I.

397. **Heteronea,** Bd., Ann. Soc. Ent. Fr., 2, 10, 298, 1852; Morr., 89, 1862; Edw., But., 2, pl. 1 of Lyc., 1874; Str., Lep., pl. 10, figs. 5, 6, 1874.
Hab.—Cala.; Utah; Nev.; Col.

398. **Clara,** H. Edw., Pr. Cal. Ac. N. Sci., 6, 1877.
Hab—So. Cala.

399. **Lycea,** Edw., Pr. E. Soc. Phil., 2, 507, 1864; Mead, Rep. Wheeler Exp., 5, 785, 1875 *.
Rapahoe, Reak., Pr. E. Soc. Phil., 6, 146, 1866; Str., Lep., pl. 10, figs. 14, 15, 1874.
Hab.—Col.; Nev.; Mont.; Ariz.; N. Mex.

400. **Fulla,** Edw., Tr. A. E. Soc., 3, 194, 1870.
Hab.—Cala.; W. Terr.; Vanc. Isld.

401. **Daedalus,** Behr, Pr. Cal. Ac. N. Sci., 3, 280, 1867; Edw., Can. Ent., 16, 2, 1884.
♀ *Aehaja*, Behr, l. c., 3, 280, 1867.
♂ ♀ *Rufescens*, Bd., Lep. de la Cala., 48, 1869.
Hab.—So. Cala.

402. **Saepiolus,** Bd., Ann. Soc. Ent. Fr., 2, 10, 296, 1852; Morr., 88, 1862.
Hab.—Cala.; Nev.; Col.; Mont.; Br. Am.

403. **Icaroides,** Bd., Ann. Soc. Ent. Fr., 2, 10, 297, 1852; Morr., 88, 1862.
var. MARICOPA, Reak., Pr. Ac. N. Sci. Phil., 1866, 245.
Pardalis, Behr, Pr. Cal. Ac. N. Sci., 3, 280, 1867.
Erymus, Bd., Lep. de la Cala., 48, 1869.
Mintha, Edw., Tr. A. E. Soc., 3, 194, 1870.
Hab.—Cala.

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404. **Amica,** Edw., Pr. E. Soc. Phil., 2, 80, 1863.
Hab.—Mackenzies River, Br. Am.

405. **Pembina,** Edw., Pr. Ac. N. Sci. Phil., 1862, 224.
Hab.—Slave Lake, Br. Am.

406. **Pheres,** Bd., Ann. Soc. Ent. Fr., 2, 10, 297, 1852; Morr., 89, 1862.
var. EVIUS, Bd., Lep. de la Cala., 49, 1869.
Hab.—Cala. to Br. Col.; Nev.; Col.

407. **Phileros,** Bd., Lep. de la Cala., 50, 1869.
Helios, Edw., Tr. A. E. Soc., 3, 208, 1871.
Hab.—Cala.; Utah; Nev.; Ariz.

408. **Ardea,** Edw., Tr. A. E. Soc., 3, 209, 1871.
Hab.—Nev.

409. **Kodiak,** Edw., l. c., 3, 20, 1870.
Hab.—Kodiak, Alaska.

Group II.

410. **Xerxes,** Bd., Ann. Soc. Ent. Fr., 2, 10, 296, 1852; Morr., 88, 1862.
Hab.—San Francisco, Cala (believed to be extinct).

411. **Antiacis,** Bd., l. c., 2, 10, 300, 1862; Morr., 90, 1862.
var. BEHRII, Edw., Pr. Ac. N. Sci. Phil., 1862, 224.
Polyphemus, Bd., Lep. de la Cala., 1869.
var. MERTILA, Edw., Pr. E. Soc. Phil., 6, 206, 1866.
Hab.—Cala.; Nev.; Ariz.

aberr. ORCUS, Edw., Tr. A. E. Soc., 2, 376, 1869.
Hab.—Cala.

412. **Couperii,** Grote, Buff. Bull., 1, 185, 1874.
Pembina, Str. (not Edw.), Lep., pl. 10, figs. 10, 11, 1874.
Hab.—Anticosti; So. Labr.; N. F'land.

413. **Afra,** Edw., Can. Ent., 15, 211, 1883.
Hab.—Saskn. (by Geddes)

414. **Lygdamas,** Doubl., Entom., 209, 1842; Edw., But., 1, 150, pl. 49, 1869.
Hab.—Mich.; Wis. to Ga.; W. Va.

Western form ORO, Scud., Can. Ent., 8, 23, 1876.
Hab.—Col.; N. Mex.; Cala.

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Group III.

415. **Sagittigera,** Feld., Reise Nov., Lep., 2, 281, pl. 35, 1865.
Catalina, Reak., Pr. Ac. N. Sci. Phil., 1866, 244; Str, Lep., pl. 10, figs. 1, 2, 1874.
Lorquini, Behr, Pr. Cal. Ac. N. Sci., 3, 280, 1867.
Daunia, Edw., Tr. A. E. Soc., 3, 272, 1871.
Viaca, Edw., l. c., 3, 209, 2871.
Rhæa, Bd., Lep. de la Cala., 51, 1869.
Hab.—Cala.; Nev.; Col.

416. **Speciosa,** H. Edw., Pr. Cal. Ac. N. Sci., 6, 1876; id., Papilio, 1, 55, 1881.
Hab.—So. Cala.

417. **Sonorensis,** Feld., Reise Nov., Lep., 2, 281, pl. 35, 1865.
Regia, Bd., Lep. de la Cala., 46, 1869; Edw., But., 2, pl. 1 of Lycæna, 1874.
Hab.—Los Angelos, San Berno., Cala.

Group IV.

418. **Podarce,** Feld., Reise Nov., Lep., 2, 282, pl. 35, 1865.
Tehama, Reak., Pr. Ac. N. Sci. Phil., 1866, 246.
Cilla, Behr, Pr. Cal. Ac. N. Sci., 3, 281, 1867.
Nestos, Bd., Lep. de la Cala., 50, 1869.
Orbitulus, Str. (not De Prun., not Esp.) Lep., pl. 10, fig. 16, 1874.
Hab.—Cala.; Nev.

419. **Aquilo,** Bd., Icon., 62, pl. 12, figs. 7, 8, 1833.
Franklinii, Curt., App. Ross Exp., 69, pl. A, figs. 8, 9, 1835; Scud., Pr. Bost. Soc. N. Hist., 17, 1875.
Hab.—Arctic Am.; Labr.

420. **Rustica,** Edw., Pr. E. Soc. Phil., 4, 203, 1865.
Hab.—Col.; Br. Am.

Group V.

421. **Enoptes,** Bd., Ann. Soc. Ent. Fr., 2, 10, 298, 1852; Morr., 89, 1862.
Hab.—Cala.; W. Terr.; Ariz.

422. **Glaucon,** Edw., Tr. A. E. Soc., 3, 210, 1871.
Hab.—Col.

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423. **Battoides,** Behr, Pr. Cal. Ac. N. Sci., 3, 282, 1867.
Hab.—Cala.; Nev.; Col.

424. **Shasta,** Edw., Pr. Ac. N. Sci. Phil., 1862, 224.
Zelmira, Feld., Reise Nov., Lep., 282, pl. 35, 1865.
Calchas, Behr, Pr. Cal. Ac. N. Sci., 3, 281, 1867.
Nivium, Bd., Lep. de la Cala., 47, 1869.
Lupini, Bd., l. c., 46, 1869.
Minehaha, Scud., Pr. Bost. Soc. N. Hist., 17, 88, 1875.
Hab.—Cala. to Oreg.; Utah; Nev.; Mont.; Col.

425. *Melissa*, Edw., Tr. A. E. Soc., 4, 346, 1873; Mead, Rep. Wheeler Exp., 5, 783, pl. 36, 1875; Str., Lep., pl. 10, figs. 8, 9, 1874; Edw., Papilio, 4, 91, 1884 *.
Hab.—Ariz.; N. Mex.; Col.; Nev.; Mont.; Kans.

426. **Scudderii,** Edw., ♂, Pr. Ac. N. Sci. Phil., 1861, 164; id., ♀, l. c., 1862, 225; Morr., 329, 1862.
Hab.—N. Y.; Mich.; Wis.; Ont.; Lake Lahaehe, Br. Col.

427. **Lotis,** Lintn., 30th Rep. N. Y. St. Mus. Nat. Hist., 1879, 169; id., Ent. Cont., 4, 57, 1878.
Hab.—Mendocino, Cala.

428. **Acmon,** Doubl.-Hew., Gen. Di. Lep., pl. 76, 1852.
Antægon, Bd., Ann. Soc. Ent. Fr., 2, 10, 295, 1852.
Hab.—Cala. to Wash. Terr.; Ariz. to Mont.

429. **Aster,** Edw., Can. Ent., 14, 194, 1882.
Hab.—N. F'land.

430. **Annetta,** Mead, Mss.; Edw., Papilio, 2, 48, 1882.
Hab.—Utah.

431. **Anna,** Edw., Pr. Ac. N. Sci. Phil., 1861, 163; Morr., 329, 1862; Str., Lep., pl. 10, figs. 4, 5, 1874.
Cajona, Reak., Pr. E. Soc. Phil., 6, 147, 1866.
Argyrotoxus, Behr, Pr. Cal. Ac. N. Sci., 3, 281, 1867.
Philemon, Bd., Lep. de la Cala., 47, 1869.
Hab.—Cala. to Col.; Oreg.; Mont.; Belly River, Br. Am. (by Geddes)

Group VI.

432. **Pseudargiolus,** Bd.-Lec.
winter form 1. LUCIA, Kirby, ♂, Faun. Bor. Amer., 4, 299, pl. 3, figs. 8, 9, 1837; Edw., But., 2, pl. 2 of Lyc., figs. 1, 2, 1884; Fern., But. Me., 89, 1884.
Hab.—Alaska; Br. Am. to Queb.; Antic.; N. E.; N. Y.; Col.

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winter form 2. MARGINATA, Edw., Papilio, 3, 86, 1883; id., But., 2, pl. cit., figs. 3, 4, 1884; Fern., l. c., 88, 1884.

Hab.—Ont.; Queb. to Long Isld.; Col.

winter form 3. VIOLACEA, Edw., Pr. E. Soc. Phil., 6, 201, 1866; id., But., 1, 149, pl. 49, 1868; 2, pl. cit., figs. 5, 6, pl. 3 Lyc., 1884 *; id., Papilio, 3, 86, et seq., 1883; Fern., l. c., 88, 1884.

Hab.—Alaska; Lake Winnipeg; Br. Am.; Ont.; Queb.; Antici.; N. E. to W. Va.; Col.

dimorphic male NIGRA, Edw., But., 1, pl. 49, 1868; 2, pl. cit., fig. 7.

Hab.—W. Va.; Col.

var. CINEREA, Edw., Papilio, 3, 8, 1883; id., But., 2, pl. cit., figs. 16, 17.

spring form PSEUDARGIOLUS, Bd.-Lec. (text, not plate), 118, 1833; Edw., But., 1, 153, pl. 50, 1869; id., Can. Ent., 10, 1, and 131, 1878 *; id., Papilio, 3, 86, 1883; id., But., 2, pl. cit., figs. 8, 9, l. c., pl. 3 of Lyc. *.
Argiolus, Abb.-Sm., pl. 15, 1797.

Hab.—Pa. to Ga.; Wis.; Tenn.

var. ARIZONENSIS, Edw., But., 2, pl. 2, cit., figs. 18, 19.

Hab.—Ariz.

summer form NEGLECTA, Edw., Pr. Ac. N. Sci. Phil., 1862s 56; id., But., 1, 155, pl. 50, 1869; id., Can. Ent., 7, 81, 1875 *; Lintn., Can. Ent., 7, 122, 1875; Edw., l. c., 10, 1, 1878 *; id., But., 2, pl. 2 of Lyc., figs. 10 to 15, pl. 3, larva, etc., 1884; Fern., But. Me., 89, 1884 *.

Hab.—Ont.; Queb.; N. E. to W. Va.; Mont.; Nev.

Pacific form PIASUS, Bd., Ann. Soc. Ent. Fr., 2, 10, 299, 1852; Edw., But., 2, pl. 2 of Lyc., fig. 20, ♂, pl. 3, fig,. 26, 27, ♂, 1884.

var. ECHO, Edw., Pr. E. Soc. Phil., 2, 506, 1864; id., But., 2, pl. 2 of Lyc., fig. 21, ♀.

Hab.—Cala.; Ariz.

Group VII.

433. **Amyntula**, Bd., Ann. Soc. Ent. Fr., 2, 10, 294, 1852; Morr., 87, 1862.

Hab.—Cala.; W. Terr., Ariz.; Nev.; Calgarry, Br. Am.

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434. **Comyntas,** Godt., Enc. Meth., 9, 660, 1823; Bd.-Lec., 120, pl. 36, 1833 *; Morr., 83, 1862; Edw., Can. Ent., 8, 202, 1876 *; Fern., But. Me., 91, 1884 *.
Hab.—Atl. St. to Rocky Mts.; Col.

435. **Monica,** Reak., Pr. Ac. N. Sci. Phil., 1866, 244; Str., Lep., pl. 10, fig. 18, 1874.
Hab.—So. Cala.; Ariz.

436. **Alce,** Edw., Tr. A. E. Soc., 3, 272, 1871.
Isola, Mead (not Reak.), Rep. Wheeler Exp., 5, 783, 1875.
Hab.—Col.; N. Mex.; Ariz.; Kans.

437. **Gyas,** Edw., l. c., 3, 210, 1871.
Hab.—Ariz.

438. **Cyna,** Edw., l. c., 9, 3, 1881.
Hab.—San Antonia, Texas.

439. **Filenus,** Poey, Cent. Lep. Cuba, pl. 2, 1832; Bd.-Lec., 114, pl. 35, 1833; Morr., 82, 1862.
Hab.—Gulf States.

440. **Isophthalma,** Herr.-Schaeff., Stett. Ent. Zeit., 73, 1869.
Pseudofea, Morr., Buff. Bull., 1, 186, 1784.
Hab.—Fla.; Ga.

441. **Exilis,** Bd., Ann. Soc. Ent. Fr., 2, 10, 294, 1852; Morr., 87, 1862.
Fea, Edw., Tr. A. E. Soc., 3, 211, 1871.
Hab.—Cala.; Ariz.; N. Mex.; Col.; Texas; Fla.

442. **Ammon,** Luc., Sagr., Hist. Cuba, 7, 612, pl. 16, figs. 7, 7a, 1856.
Hab.—Indian River and So. Fla.

443. **Marina,** Reak., Pr. Ac. N. Sci. Phil., 1868, 87.
Hab.—So. Cala.; So. Col.; Ariz.

444. **Theonus,** Luc., Sagr., Hist. Cuba, 7, 611, pl. 16, figs. 8, 8a, b, 1856.
Cassius, Morr., Buff. Bull., 1, 187, 1874.

445. **Striata,** Edw., Field and Forest, 3, 86, 1877.
Hab.—San Antonio, Texas; occasl. near Racine, Wis. (by Hoy)

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HESPERIDÆ.

SECTION I.

CARTEROCEPHALUS, Lederer.

446. **Maudan**, Edw., Pr. E. Soc. Phil., 2. 20, pl. 5, 1863; Fern., But. Me., 93, 1884.
Mesapano, Scud., Pr. Bost. Soc. N. Hist., 11, 383, 1868.
Skada, Edw., Tr. A. E. Soc., 3, 196, 214, 1870.
Hab.—Alaska to Labr.; Queb.; Cala.; White Mts., N. H.; Me.

447. **Omaha**, Edw., Pr. E. Soc. Phil., 2, 21, 1863.
Mingo, Edw., l. c., 6, 207, 1866.
Californica, Scud., Syst. Rev., 54, 1872.
Hab.—W. Va.; Col.; Cala.

ANCYLOXYPHA, Felder.

448. **Numitor**, Fab., Ent. Syst., 3, 324, 1793; Morr., 120, 1862; Fern., But. Me., 94, 1884.
Puer, Hüb., Zutr. Ex. Schmett., figs. 275, 276, 1823.
Marginatus, Harr., 308, 1862.
Hab.—Me. to Texas; Neb.

COPÆODES, Speyer.

449. **Procris**, Edw., Tr. A. E. Soc., 3, 215, 1871.
var. WACO, Edw., l. c., 2, 122, ♂, 1868.
Minima, Edw., l. c., 3, 196, 1870.
Hab.—Texas; N. Mex.; Ariz.; So. Cala.

450. **Arene**, Edw., l. c., 3, 214, 1871.
Hab.—Texas; Ariz.

451. **Wrightii**, Edw., Can. Ent., 14, 152, 1882.
Hab.—Mohave, Cala.

452. **Myrtis**, Edw., Papilio, 2, 26, 1882.
Hab.—Ariz.

453. **Eunus**, Edw., Papilio, 1, 47, 1881.
Hab.—Kern River, Cala.

THYMELICUS, Speyer.

454. **Garita**, Reak., Pr. E. Soc. Phil., 6, 150, 1866.
Hylax, Edw., Tr. A. E. Soc., 3, 274, 1871.
Hab.—Col.; Dak.; Fort Ellis, Br. Am.

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455. **Poweschiek,** Park., Am. Ent., 2, 271, 1870.
Hab.—Ia.; Ill.; Mont.; Col.

PAMPHILA, Fabricius.

Group I.

456. **Massasoit,** Scud., Pr. Ess. Ins., 3, 171, 1862.
Hab.—East., Mid. St.; Neb.; Texas; Col.

457. **Zabulon,** Bd.-Lec., pl. 76, 1833; Morr., 116, 1862; Fern., But. Me., 94, 1884 *.
var. HOBOMOK, Harr., 313, fig. 137, 1862.
dimorphic form ♀, POCAHONTAS, Scud., Pr. Ess. Ins., 3, 171, 1862.
var. ♀, QUADRAQUINA, Scud., Pr. Bost. Soc. N. Hist., 11, 381, 1868.
Hab.—Queb.; Ont. to Gulf Mex.; Miss. Valley; Calgarry, Br. Am.

458. **Taxiles,** Edw., Tr. A. E. Soc., 9, 5, 1881.
Hab.—Ariz.; Col.; Nev.; So. Cala,

Group II.

459. **Ruricola,** Bd., Ann. Soc. Ent. Fr., 2, 10, 315, 1852; Morr., 109, 1862.
Hab.—Napa Co., Cala.

460. **Oregonia,** Edw., Can. Ent., 15, 150, 1883.
Hab.—Cala.; Nev.; Br. Am.

461. **Columbia,** Scud., Syst. Rev., 56, 1872.
Sylvanoides, Scud. (not Bd.), Mem. Bost. Soc. N. Hist., 2, 349, pl. 10, figs. 21, 22, 1874.
Hab.—Cala.

462. **Colorado,** Scud., l. c., 349, pl. 10, figs. 16–18, 1874.
Hab.—Cala.; W. Terr.; Col.; Ariz.

var. IDAHO, Edw., Can. Ent., 15, 148, 1883.
Hab.—Cala.; Oreg.; W. Terr.; Br. Am.

463. **Nevada,** Scud., l. c., 347, pl. 10, figs. 1–4, 1874.
Hab.—Nev.; Col.; Ariz.; Br. Am.

464. **Manitoba,** Scud., l. c., 351, pl. 10, figs. 8–11, 1874.
Hab.—Lake Winnipeg; Br. Col.; W. Terr.; Cala.

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465. **Juba,** Scud., l. c., 349, pl. 10, figs. 19, 20, 1874.
Hab.—Cala.; Col.

var. VIRIDIS, Edw., Can. Ent., 15, 147, 1883.
Hab.—Los Vegas, N. Mex.

466. **Sassacus,** Harr., Ins. Mass., 315, 1862; Scud., Pr. Ess. Ins., 3, 173, 1862; id., Mem. Bost. Soc. N. Hist., 2, 346, pl. 10, figs. 5, 7, 1874; Fern., But. Me., 96, 1884.
Hab.—N. E.; N. Y. to Neb.; Ga.; Fla.; Col.

467. **Harpalus,** Edw., Tr. A. Soc., 9, 3, 1881.
Hab.—Nev.

468. **Pawnee,** Dodge, Can. Ent., 6, 44, 1874.
Hab.—Neb.; Mont.

469. **Ottoe,** Edw., Pr. E. Soc. Phil., 6, 207, 1866; Scud., Mem. Bost. Soc. N. Hist., 2, 348, pl. 10, fig. 6, 1874.
Hab.—Neb.; Ind. Terr.; Ariz.

470. **Lasus,** Edw., ♂, Papilio, 4, 54, 1884.
Hab.—So. Ariz.

471. **Cabelus,** Edw., Tr. A. E. Soc., 9, 4, 1881.
Hab.—Nev.; Cala.

472. **Napa,** Edw., Pr. E. Soc. Phil., 4, 202, pl. 1, 1864.
Dacotah, Edw., Tr. A. E. Soc., 3, 277; 1871.
Hab.—Col.

473. **Metea,** Scud., Pr. Ess. Ins., 3, 177, 1862.
? ♀, *Ridingsii,* Reak., Pr. E. Soc. Phil., 6, 151, 1866.
Hab.—Conn.; N. Y.; Texas; Col.

474. **Rhesus,** Edw., Field and Forest, 3, 116, 1877.
Hab.—Col.; Ariz.

475. **Carus,** Edw., Can. Ent., 15, 34, 1883.
Hab.—West Texas; Ariz.

476. **Uncas,** Edw., Pr. E. Soc. Phil., 2, 19, pl. 5, ♂, 1863.
Hab.—Del. to Ohio; Dak. to Ariz.; Br. Am.

477. **Licinus,** Edw., Tr. A. E. Soc., 3, 275, 1871.
Hab.—Texas.

478. **Seminole,** Scud., Syst. Rev., 55, 1872.
Hab.—Fla.; N. C.; N. J.; Ia.

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479. **Attalus,** Edw., Tr. A. E. Soc., 3, 276, 1871.
Hab.—Texas.

480. **Yuma,** Edw., l. c., 4, 346, 1873.
Hab.—Ariz.

481. **Snowi,** Edw., ♂, Can. Ent., 9, 29, 1877; ♀, Field and Forest, 3, 117, 1877.
Hab.—Col.; N. Mex.; Ariz.

482. **Leonardus,** Harr., 314, fig. 138, 1862; Morr., 110, 1862; Fern., But. Me., 95, 1884.
Hab.—N. E. to W. Va.; Indian River, Fla.; Kans.; Queb.

483. **Meskei,** Edw., Can. Ent., 9, 58, 1877.
Straton, Edw., ♂ ♀, Papilio, 1, 78, 1881.
Hab.—Texas; Indian River, Fla.

484. **Nemorum,** Bd., Ann. Soc. Ent. Fr., 2, 10, 314, 1852; Morr., 107, 1862.
Yreka, Edw., Pr. E. Soc. Phil., 6, 207, 1866.
Hab.—Cala.

485. **Sylvanoides,** Bd., l. c., 2, 10, 313, 1852; Morr., 107, 1862.
Sonora, Scud., Syst. Rev., 57, 1872.
Hab.—Cala.; Neb.; Col.; W. Terr.

486. **Agricola,** Bd., l. c., 2, 10, 314, 1852; Morr., 108, 1862.
Hab.—Cala.; Nev.; W. Terr.

487. **Milo,** Edw., Can. Ent., 15, 34, 1883.
Hab.—Mt. Hood, Oreg.

488. **Pratincola,** Bd., l. c., 2, 10, 315, 1852; Morr., 108, 1862.
Hab.—Cala.; W. Terr.

489. **Verus,** Edw., Tr. A. E. Soc., 9, 4, 1881.
Hab.—Havilah, Cala.

490. **Campestris,** Bd., l. c., 2, 10, 316, 1852; Morr., 108, 1862.
Hab.—So. Cala.

491. **Huron,** Edw., Pr. E. Soc. Phil., 2, 16, pl. 1, 1863.
Hab.—Atl. St. to Fla.; Miss. Valley; Texas; Ariz.

492. **Morrisonii,** Edw., Field and Forest, 3, 116, 1878.
Hab.—So. Col.; Ariz.

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493. **Phylæus,** Drury, 1, pl. 13, 1770; Bd.-Lec., pl. 78, 1833; Morr., 118, 1862; Chapm., Can. Ent., 11, 190, 1879 *.
Bucephalus, Humph.-West., Br. But., 126, pl. 40, 1841.
Hab.—Mid. and Gulf St. to Pac.

494. **Brettoides,** Edw., Papilio, 3, 71, 1883.
Hab.—Texas; Utah.

495. **Brettus,** Bd.-Lec., ♀, pl. 75, 1833; Morr., 118, 1862.
♂, *Wingina*, Scud., Pr. Ess. Ins., 3, 173, 1862.
Hab.—Gulf St.; W. Va.

496. **Chusca,** Edw., Tr. A. E. Soc., 4, 346, 1873.
Hab.—Ariz.

497. **Draco,** Edw., l. c., 3, 274, 1871.
Hab.—Col.

498. **Sabuleti,** Bd., Ann. Ent. Soc. Fr., 2, 10, 316, 1852; Morr., 109, 1862.
Hab.—Cala.

499. **Otho,** Sm.-Abb., pl. 16, 1797.
var. EGEREMET, Scud., Pr. Ess. Ins., 3, 174, 1862; Fern., But. Me., 97, 1884.
Otho, Bd.-Lec., pl. 17, 1833 *.
Aetna, Scud., Syst. Rev., 58, 1872.
Ursa, Worth., Can. Ent., 12, 49, 1880.
Hab.—Atl. St.; Miss. Valley; Texas; Ont.

500. **Peckius,** Kirby, Faun., Bor. Am., 4, 300, pl. 4, fig. 5, 1837; Morr., 120, 1862; Fern., But Me., 97, 1884.
Wamsutta, Harr., 318, fig. 141, 1862.
Hab.—N. E. to Wis.; W. Va.; Kans.; Ont.; Queb.

501. **Mystic,** Scud., Pr. Ess. Ins., 3, 172, 1862; Edw., Pr. E. Soc. Phil., 2, 15, pl. 1, 1863; Fern., But. Me., 98, 1884 *.
Hab.—N. E.; N. Y.; Ont.; Queb.

502. **Siris,** Edw., Papilio, 1, 47, 1881.
Hab.—Puget Sound, W. Terr.

503. **Mardon,** Edw., Papilio, 1, 47, 1881.
Hab.—Puget Sound, W. Terr.

504. **Cernes,** Bd.-Lec., pl. 76, 1833; Fern., But. Me., 99, 1884.
Arogos, id., l. c., pl. 76.
Ahaton, Harr., 317, fig. 140, 1862.
Hab.—N. E. to Mont.; Fla.; Br. Am.; Ont.; Queb.

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505. **Manataaqua,** Scud., Pr. Ess. Ins., 3, 175, 1862; Fern., But. Me., 100, 1884.
Cernes, Harr., 316, 1862.
Hab.—U. S. generally; Br. Am.

506. **Verna,** Edw., Pr. Ac. N. Sci. Phil., 1862, 57.
Pottawattomie, Worth., Can., Ent. 12, 50, 1880.
Hab.—N. Y.; Md. to Ga.; W. Va.; Ohio; Ind.; Kans.

507. **Vestris,** Bd., ♀, Ann. Soc. Ent. Fr., 2, 10, 317, 1852.
Kiowah, Reak., Pr. E. Soc. Phil., 6, 150, 1866.
Osceola, Lintn., 30th Rep. N. Y. St. Mus. Nat. Hist., 1878, 170; id., Ent. Cont., 4, 58, 1878.
Hab.—Cala.; Col.; Indian River, Fla.

508. **Metacomet,** Harr., 317, 1862; Fern., But. Me., 100, 1884.
Rurea, Edw., Pr. Ac. Sci. Phil., 1862, 58.
Hab.—N. E. to Mont.; Kans.; Nev.; Ont.; Queb.

509. **Bellus,** Edw., Papilio, 4, 57, 1884.
Hab.—So. Ariz.

510. **Accius,** Sm.-Abb., pl. 23, ♀, 1797; Chapm., Can. Ent., 11, 191, 1879 *.
Monoco, Scud., Pr. Ess. Ins., 3, 178, 1862.
Nortonii, Edw., Tr. A. E. Soc., 1, 287, 1867.
Punctella, Gr.-Rob., Tr. A. E. Soc., 1, 1, 1867.
Hab.—Gulf St.; N. C.; East Pa. (auct. Aaron)

511. **Loammi,** Whitn., Can. Ent., 8, 76, 1876.
Regulus, Edw., Tr. A. E. Soc., 9, 5, 1881.
Hab.—Fla.; N. C.

512. **Horus,** Edw., Tr. A. E. Soc., 3, 277, 1871.
Hab.—Texas.

513. **Deva,** Edw., ♀, Tr. A. E. Soc., 5, 292, 1876; id., ♂, l. c., 9, 5, 1881; id., Papilio, 2, 138, 1882, 4, 55, 1884.
Hab.—So. Col.; Ariz.

514. **Lunus,** Edw., Papilio, 4, 56, 1884.
Hab.—So. Ariz.

515. **Maculata,** Edw., Pr. E. Soc. Phil., 4, 201, pl. 1, 1865; Chapm., Can. Ent., 11, 191, 1879 *.
Hab.—Gulf St.; occasl. N. Y.

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516. **Panoquin,** Scud., Pr. Ess. Ins., 3, 178, 1662.
Ophis, Edw., Tr. A. E. Soc., 3, 216, 1871.
Hab.—Gulf St.; Atlantic City, N. J.

517. **Ocola,** Edw., Pr. E. Soc. Phil., 2, 20, pl. 11, 1863.
Hab.—Gulf St.; East Pa. (auct. Aaron); Whitings, Ind.

518. **Ethlius,** Cram., 4, pl. 392, figs. A, B, 1782.
Chemnis, Fab., Ent. Syst., 3, 331, 1793.
Olynthus, Bd.-Lec., pl. 75, 1833.
Hab.—Gulf St.; occasl. N. Y.

519. **Pittacus,** Edw., Papilio, 2, 138, 1882.
Hab.—Ariz.

520. **Python,** Edw., l. c., 2, 139, 1882.
Hab.—Ariz.

521. **Cestus,** Edw., l. c., 4, 57, 1884.
Hab.—So. Ariz.

522. **Rhena,** Edw., Field and Forest, 3, 115, 1877.
Hab.—So. Col.

523. **Bimacula,** Gr.-Rob., Ann. N. Y. Lyc. N. Hist., 8, 433, 1867; Fern., But. Me., 101, 1884.
Acanootus, Scud., Pr. Bost. Soc. N. Hist., 11, 381, 1868.
Illinois, Dodge, Can. Ent., 4, 217, 1872.
Hab.—N. E. to Neb.; Ill.

524. **Pontiac,** Edw., Pr. E. Soc. Phil., 2, 17, pl. 11, ♂, 1863.
Conspicua, Edw., l. c., 2, 17, pl. 5, ♀, 1863; Parker, ♂, Can. Ent., 3, 51, 1871.
Orono, Scud., Syst. Rev., 58, 1872.
Hab.—Mass. to Neb.; N. J.

525. **Dion,** Edw., Can. Ent., 11, 238, 1879.
Hab.—Neb.; Hamilton, Ont.

526. **Arpa,** Bd.-Lec., pl. 68, 1833; Chapm., Can. Ent., 11, 191, 1879 *.
Hab.—Gulf States.

527. **Palatka,** Edw., Tr. A. E. Soc., 1, 287, 1867; Chapm., l. c., 11, 192, 1879 *.
Hab.—Gulf States; Neb.

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528. **Melane,** Edw., Tr. A. E. Soc., 2, 312, 1869.
Hab.—Cala.

529. **Vitellius,** Sm.-Abb., pl. 17, 1797.
Iowa, Scud., Tr. Chic. Ac. N. Sci., 336, 1868.
Hab.—Ga.; So. Texas; Ia.; Neb.

530. **Delaware,** Edw., ♂, Pr. E. Soc. Phil., 2, 19, pl. 5, 1863.
♀ *Logan*, Edw., l. c., 2, 18, pl. 1, 1863.
Hab.—Mass. to Fla.; Ill.; Kans.; Mont.

531. **Lagus,** Edw., Tr. A. E. Soc., 9, 5, 1881.
Hab.—West Texas; So. Col.

532. **Byssus,** Edw., Can. Ent., 12, 224, 1880.
Hab.—Indian River, Fla.; Texas.

533. **Phylace,** Edw., Field and Forest, 3, 117, 1877.
Hab.—So. Col.; Ariz.

534. **Osyka,** Edw., Tr. A. E. Soc., 1, 288, 1867.
Hab.—Gulf St.; Whitings, Ind.

535. **Comus,** Edw., l. c., 5, 206, 1876.
Nilus, Edw., Field and Forest, 3, 118, 1877.
Hab.—Texas; So. Col.

536. **Eufala,** Edw., l. c., 2, 311, 1869.
Hab.—Fla.; Texas.

537. **Arabus,** Edw., Papilio, 2, 26, 1882.
Hab.—Ariz.

538. **Fusca,** Gr.-Rob., Tr. A. E. Soc., 1, 2, 1867.
Hab.—Gulf St.

539. **Nereus,** Edw., l. c., 5, 205, 1876; id., Papilio, 2, 139, 1882.
Hab.—Ariz.

540. **Hianna,** Scud., Pr. Bost. Soc. N. Hist., 11, 382, 1868.
Hab.—Mass. to Neb.

541. **Viator,** Edw., Pr. E. Soc. Phil., 4, 202, pl. 1, 1865.
Hab.—Gulf St.; Mass.; N. J.; Ill.; Wis.; Hamilton, Ont.

AMBLYSCIRTES, Speyer.

542. **Vialis,** Edw., Pr. Ac. N. Sci. Phil., 1862, 58; Fern., But. Me., 101, 1884.
Hab.—Orono, Me.; Mid., South., West. St.; Queb.

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543. **Nysa,** Edw., Can. Ent., 9, 191, 1877.
Similis, Str., Lep., Pt. 14, 1878.
Hab.—Texas.

544. **Eos,** Edw., Tr. A. E. Soc., 3, 276, 1871.
Hab.—Texas; Ga.; Fla.

545. **Samoset,** Scud., Pr. Ess. Ins., 3, 176, 1862; Fern. But. Me., 102, 1884.
Hegon, Scud., l. c., 3, 176, 1862.
Nemoris, Edw., Pr. E. Soc. Phil., 2, 507, 1863; id., l. c., 4, pl. I, 1865.
Alternata, Gr.-Rob., Tr. A. E. Soc., 1, 3, 1867.
Hab.—North. and Mid. St.; Me. to Ga.; Wis.; Ia.; Ont.; Queb.

546. **Aenus,** Edw., Field and Forest, 3, 118, 1877.
Hab.—West Texas; So. Col.; N. Mex.; Ariz.

547. **Simius,** Edw., Tr. A. E. Soc., 9, 6, 1881.
Hab.—So. Col.; Ariz.

548. **Cassus,** Edw., 3, 72, 1883.
Hab.—Mt. Graham, Ariz.

549. **Nanno,** Edw., Papilio, 2, 142, 1882.
Hab.—Ariz.

550. **Textor,** Hüb., Zutr. Ex. Schmett., figs. 515, 516, 1825.
Oneko, Scud., Pr. Ess. Ins., 3, 176, 1862.
Wakulla, Edw., Tr. A. E. Soc., 2, 311, 1869.
Hab.—N. C. to Texas.

SECTION II.

PYRGUS, Westwood.

Group I.

551. **Ericetorum,** Bd., Ann. Soc. Ent. Fr., 2, 10, 313, 1852; Morr., 122, 1862.
Alba, Edw., Pr. E. Soc. Phil., 6, 206, 1866.
Hab.—N. Mex.; Ariz.; Cala.; Oreg.

552. **Oceanus,** Edw., Tr. A. E. Soc., 3, 213, 1871.
Hab.—Ariz.

553. **Domicella,** Erichs., Schomb. Reise, 3, 601, 1848.
var. NEARCHUS, Edw., Papilio, 2, 26, 1882.
Hab.—Ariz.

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554. **Tessellata,** Scud., Syst. Rev., 52, 1872.
Oileus, Humph.-West. (not Linn.), Br. But., pl. 38, 1841.
Communis, Gr., Can. Ent., 4, 69, 1872; id., l. c., 4, 220, 1872.
var. MONTIVAGUS, Reak., Pr. Ac. N. Sci. Phil., 1866, 46.
Hab.—Pa. to Gulf.; Atl. to Pac.; Br. Am.

555. **Centaureæ,** Ramb., Faun. Ent, And., pl. 8, fig. 10, 1839.
Ruralis, Bd., Ann. Soc. Ent. Fr., 2, 10, 311, 1852; Morr., 121, 1862.
Wyandot, Edw., Pr. E. Soc. Phil., 2, 21, pl. 5, 1863.
Hab.—N. Y.; W. Va.; Col.; Labr.

556. **Philetas,** Edw., Papilio, 1, 46, 1881.
Hab.—West Texas.

557. **Cæspitalis,** Bd., Ann. Soc. Ent. Fr., 2, 10, 312, 1852; Morr., 121, 1862.
Ricara, Edw., Pr. E. Soc. Phil., 4, 203, pl. 1, 1865.
Petreius, Edw., Tr. A. E. Soc., 3, 195, 1870.
Hab.—Col.; Nev.; Cala.; Oreg.

558. **Xanthus,** Edw., Field and Forest, 3, 142, 1877.
Hab.—So. Col.

559. **Scriptura,** Bd., Ann. Ent. Soc. Fr., 2, 10, 312, 1852; Morr. 121, 1862.
Hab.—Cala.; Ariz.; Mont.

Group II.

560. **Nessus,** Edw., Can. Ent., 9, 192, 1877.
Notabilis, Str., Lep., Pt. 14, 131, 1878.
Hab.—Coast to San Antonio, Texas.

NISONIADES, Speyer.

561. **Brizo,** Bd.-Lec., pl. 66, 1833 *; Morr., 114, 1862; Harr., 309, fig. 132, 1862; Fern., But. Me., 102, 1884.
Hab.—Atl. to Rocky Mts.; Col.; Ariz.; Br. Am.; Ont.; Queb.

562. **Icelus,** Lintn., 23d Rep. N. Y. St. Cab. N. Hist., 1872, 162; id., Ent. Cont., 1, 30, pl. 7, figs. 5, 6, 1872; id., Papilio, 1, 72, 1881; Fern., But. Me., 103, 1884.
Hab.—N. E. to Mich.; Ill.; Fla.; Col.; Ariz.; W. Terr.; Ont.

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563. **Somnus,** Lintn., Papilio, 1, 73, 1881.
Hab.—Indian River, Fla.

564. **Lucilius,** Lintn., 23d Rep. N. Y. St. Cab. N. Hist., 1872, 162; id., Ent. Cont., 1, 32, pl. 7, figs. 1, 2, 1872; id., l. c., 4, 67, 1878 *.

565. **Persius,** Scud., Pr. Ess. Ins., 3, 170, 1862; Fern., But. Me., 103, 1884.
Hab.—N. E. to Mont.; W. Terr.; Col.; N. Mex.

566. **Alpheus,** Edw., Tr. A. E. Soc., 5, 206, 1876; id., Papilio, 2, 139, 1882.
Oricus, Edw., Can. Ent., 11, 51, 1879.
Hab.—N. Mex.; Ariz.; Nev.

567. **Ausonius,** Lintn., 23d Rep. N. Y. St. Cab. N. Hist., 1872, 166; id., Ent. Cont., 34, pl. 7, figs. 11, 12, 1872.
Hab.—Mid. St.; W. Va.

568. **Afranius,** Lintn., 30th Rep. N. Y. St. Mus. Nat. Hist., 1878, 175; id., Ent. Cont., 4, 63, 1878.
Hab.—So. Col.; Ariz.

569. **Martialis,** Scud., Tr. Chic. Ac. N. Sci., 1, 335, 1869; Lintn., Ent. Cont., pl. 7, figs. 7, 8, 1872.
Hab.—Atl. St. to Fla.; Miss. Valley; Kans.; Col.

570. **Juvenalis,** Fab., Ent. Syst., 3, 339, 1793; Sm.-Abb., pl. 21, 1797 *; Bd.-Lec., pl. 65, 1883 *; Harr., 309, 1862 *; Morr., 114, 1862.
Costalis, Doubl.-Hew., Gen. Di. Lep., 2, 519, pl. 79, 1852.
Hab.—Atl. St. to Fla.; Miss. Valley; Col.; Ariz.; Ont.; Queb.

571. **Petronius,** Lintn., Papilio, 1, 70, 1881.
Hab.—Indian River, Fla.

572. **Propertius,** Lintn., Papilio, 1, 71, 1881.
Hab.—Cala.

573. **Nævius,** Lintn., Papilio, 1, 69, 1881.
Hab.—Indian River, Fla.

574. **Pacuvius,** Lintn., 30th Rep. N. Y. St. Mus. N. Hist., 1878, 172; id., Ent. Cont., 4, 60, 1878.
Hab.—N. Mex.; Ariz. Col.

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575. **Tatius,** Edw., Papilio, 2, 179, 1882.
Hab.—Ariz.

576. **Clitus,** Edw., Papilio, 2, 180, 1882.
Hab.—Ariz.

577. **Funeralis,** Lintn., 30th Rep. N. Y. St. Mus. Nat. Hist., 1878. 173; id., Ent. Cont., 4, 61, 1878.
Hab.—Texas; Ariz.; So. Cala.

578. **Tristris,** Bd., Ann. Soc. Ent. Fr., 2, 10, 311, 1852; Morr., 115, 1862; Lintn., Ent. Cont., 4, 62, 1878.
Hab.—Cala.; Ariz.

SYSTASEA, Butler.

579. **Zampa,** Edw., Tr. A. E. Soc., 5, 207, 1876.
Hab.—Ariz; So. Texas.

PHOLISORA, Speyer.

580. **Catullus,** Fab., Ent. Syst., 3, 348, 1793; Sm.-Abb., pl. 24, 1797 ✱; Morr., 115, 1862.
Hab.—U. S. generally.

581. **Pirus,** Edw., ♂, Field and Forest, 3, 119, 1878; id., ♀, Tr. A. E. Soc., 9, 7, 1881.
Hab.—So. Col.; N. Mex.; Ariz.

582. **Ceos,** Edw., Papilio, 2, 140, 1882.
Hab.—Ariz.

583. **Hayhurstii,** Edw., Tr. A. E. Soc., 3, 22, 1870.
Hab.—W. Va. to Kans.; Fla.; Texas; N. Mex.

584. **Libya,** Scud., Rep. Hayden Bull., 4, 258, 1878.
Hab.—Utah; Mohave, Cala.

585. **Lena,** Edw., Can. Ent., 14, 5, 1882.
Hab.—Mont.

ACHLYODES, Westwood.

586. **Thraso,** Hüb., Samml. Ex. Schmett., 1, 1806–1816; Bd., Sp. Gen., 1, pl. 13, fig. 6, 1836.
Tamenund, Edw., Tr. A. E. Soc., 3, 215, 1871.
Hab.—Texas.

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EUDAMUS, Swainson.

Group I.

587. **Electra,** Lintn., Can. Ent., 13, 63, 1881.
Hab.—Hamilton, Ont. (by Moffat)

588. **Pylades,** Scud., Pr. Bost., Soc. N. Hist., 13, 207, 1870; Fern., But. Me., 104, 1884 *.
Bathyllus, Harr. (not Sm.-Abb.), 312, fig. 135, 1862.
Hab.—N. E. to Fla.; Dak.; Col.; Cala.; Ont.; Queb.

589. **Nevada,** Scud., Syst. Rev., 50, 1872; Lintn., Papilio, 1, 74, 1881.
Hab.—Texas; Ariz.; Col.

590. **Bathyllus,** Sm.-Abb., pl. 22, 1797 *; Bd.-Lec., pl. 74, 1833 *; Morr., 106, 1862.
Hab.—W. Va. to Fla.; Kans.; N. Mex.

591. **Moschus,** Edw., Papilio, 2, 141, 1882.
Hab.—Ariz.

592. **Hippalus,** Edw., l. c., 2, 27, 1882.
Hab.—Ariz.

593. **Drusius,** Edw., Can. Ent., 15, 211, 1883.
Hab.—So. Ariz.

594. **Epigena,** Butl., Tr. E. Soc. Lond., 4, 493, 1870; id., Lep. Exot., 65, pl. 25, fig. 6, 1870; Lintn., Ent. Cont., 4, 69, 1878; Edw., Papilio, 2, 141, 1882.
Hab.—Texas; Ariz.

595. **Lycidas,** Sm.-Abb., pl. 20, 1797 *; Bd.-Lec., pl. 71, 1833 *; Morr., 106, 1862.
Lyciades, Hüb., Zutr. Ex. Schmett., figs. 621, 622, 1832.
Hab.—Mass. to Gulf Mex.; Miss. Valley.

596. **Cellus,** Bd.-Lec., pl. 73, 1833 *; Morr., 105, 1862.
Festus, Hüb., Zutr. Ex. Schmett., figs. 907, 908, 1837.
Hab.—W. Va. to Gulf Mex.; Texas; Ariz.

Group II.

597. † **Hesus,** West.-Hew., Gen. Di. Lep., pl. 78, 1852.
Hab.—Texas.

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598. **Zestos,** Hüb., Zutr. Ex. Schmett., figs. 615, 616, 1832.
Oberon, Worth., Papilio, 1, 132, 1881.
Tityrus, var. *Oberon*, Aaron, Papilio, 4, 26, 1884.
Hab.—Fla.; Sanford, Marco Isld.

599. **Tityrus,** Fab., Syst. Ent., 532, 1875; Sm.-Abb., pl. 19, 1797 *; Bd.-Lec., pl. 72, 1833 *; Fitch, 5th Rep. N. Y. Agr. Soc., 1859, 152 *; Morr., 112, 1862; Harr., 310, figs. 133, 134, and pl. 5, fig. 1, 1862 *.
Hab.—U. S. generally; Br. Am.; Ont.; Queb.

Group III.

600. **Proteus,** Linn., Syst. Nat., 1, 2, 794, 1767; Sm.-Abb., pl. 18, 1797 *; Bd.-Lec., pl. 69, 1833 *; Morr., 106, 1862; Chapm., Can. Ent., 11, 193, 1879 *.
Hab.—South. St.; occasl. N. Y.

601. **Simplicius,** Stoll, Supplt. Cram., pl. 39, figs. 6, 6 E, 1791.
Hab.—Texas; Ariz.

602. **Albofasciatus,** Hew., Desc. Hesp., Pt. 2, No. 2, 1867.
Hab.—Texas; Ariz.

Group IV.

603. **Dorus,** Edw., Papilio, 2, 140, 1882.
Hab.—So. Ariz.

ERYCIDES, Westwood.

604. † **Urania,** West.-Hew., Gen. Di. Lep., 510, pl. 79, 1852.
Hab.—Texas.

605. † **Texana,** Scud., Syst. Rev., 47, 1872.
Hab.—Texas.

606. † **Sanguinea,** Scud., l. c., 47, 1872.
Hab.—Texas.

607. **Batabano,** Lef., Sagr., Hist. Cuba, 7, 264, pl. 1, figs. 4, 5, 1867.
Mancinus, Herr.-Schaeff., Corr. Regensb., 16, 624, 1856.
Okeechobee, Worth., Papilio, 1, 133, 1881.
Hab.—Fla.; Cuba.

608. **Amyntas,** Fab., Ent., 533, 1775.
Savignyi, Latr., Enc. Meth., 9, 741, 1823.
Hab.—Key West, Fla.

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PYRRHOPYGA, Westwood.

609. **Araxes,** Hew., Desc. Hesp., Pt. 2, No. 3, 1867; Edw., Papilio, 2, 142, 1882.
Hab—Ariz.

MEGATHYMUS, Riley.

610. **Yuccæ,** Bd.-Lec., pl. 70, 1833 ∗; Riley, Tr. Ac. Sci. St. Louis, 323–344, 1876, id., 8th Mo. Ent. Rep., 169, 1876; id., 9th Mo. Ent. Rep., 129, 1877 ∗.
Hab.—South. St.; N. Mex.; Ariz.

var. COLORADENSIS, Riley, Tr. Ac. Sci. St. Louis, 3, 566–568, 1877.
Hab.—Col.

611. **Cofaqui,** Str., Pr. Ac. N. Sci. Phil., 1876, 148 ♀ ∗.
Hab.—Fla.; Col.

612. **Neumoegenii,** Edw., Papilio, 2, 27, 1882.
Hab.—Ariz.

Species at some time accredited to the North American fauna, but omitted in this Catalogue for want of authentication:

Papilio Zonaria, Butl., Ent. Mo. Mag., 5, 270, 1869; Bd.-Lec., 11, pl. 3, 1833.
Sinon, Cram. (not Fab.), 4, pl. 317, figs. C, D, 1782.
" **Mylotes,** Bates, Tr. E. Soc. Lond., 3, 5, 346, 1861.
" **Devilliersii,** Godt., Enc. Meth., 9, 810, 1823; Bd.-Lec., 36, pl. 14, 1833.
Leptalis Melite, Linn., Syst. Nat., 2, 755, 1767.
Neophasia Terlooii, Behr, Tr. A. E. Soc., 2, 304, 1869 (Mexican).
Callidryas Cipris, Fab., Ent. Syst., 3, 212, 1793.
Gonepteryx Maerula, Fab. Syst. Ent., 479, 1775; Bd.-Lec., 71, pl. 23, 1833.
" **Clorinde,** Godt., Enc. Meth., 9, 813, 1823.
Terias Elathea, Cram., 2, pl. 99, 1779.
Midea, Mén., Nouv. Mèm. Soc. Imp. Nat. Mosc., 3, pl. 2, 1834.
" **Palmyra,** Poey, Mem. Nat. Hist. Cuba, 1, 249, pl. 24, 1851.
Ceratinia Lycaste, Fab., Ent. Syst., 3, 161, 1793.
Mechanitis Californica, Reak., Pr. E. Soc. Phil., 5, 223, 1865.
Ithomia Diaphana, Dru., 2, pl. 7, 1773.

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Ithomia Phono, Gey., in Hüb., Zutr. Ex. Schmett., figs. 987, 988, 1837.
Ageronia Feronia, Linn., Mus. Lud. Uhl., 283, 1764.
" **Fornax**, Hüb., Samml. Ex. Schmett., 1, 1816–1824.
Argynnis Astarte, Doubl.-Hew., Gen. Di. Lep., pl. 23, 1848.
" **Nenoquis**, Reak., Pr. Ac. N. Sci. Phil., 1866, 247.
" **Morrisii**, Reak., l. c., 1866, 245.
Collina, Bd., Lep. de la Cala., 54, 1869 (Mexican).
Melitæa Theona, Mén., Cat. Ac. Petr. Lep., 1, 86, pl. 2, 1855.
Phyciodes Ismeria, Bd.-Lec., 168, pl. 46, 1833.
Eresia Hermas, Hew., Ex. But., 3, pl. 5, Eresia, 1864.
Grapta C Album, Linn., Syst. Nat., 2, 778, 1867.
" **V Album**, Esp., Eur. Schmett., 2, pl. 52, 1780.
Callicore Clymena, Cram., 1, pl. 24, figs. E, F, 1775.
Smyrna Karwinski, Hüb., Samml. Ex. Schmett., 1, 1816–1824.
Victorina Steneles, Linn., Mus. Lud. Ulr., 218, 1764.
Apatura Idyja, Hüb., Samml. Ex. Schmett., 1, 1816–1824.
Megistanis Acheronta, Fab. Syst. Ent., 501, 1775.
Aganisthos Orion, Fab. Syst. Ent., 485, 1775.
Libythea Motya, Bd.-Lec., pl. 64, 1833.
Eumenia Minijas, Hüb., Samml. Ex. Schmett., 1, 1806–1816.
Thecla Liparops, Bd.-Lec., 99, pl. 64, 1833.
Lycæna Tejua, Reak., Pr. Ac. N. Sci. Phil., 1866, 245.
" **Isola**, Reak., l. c., 1866, 332.
Pamphila Comma, Linn., Syst. Nat., 1, 2, 793, 1767.
" **Sylvanus**, Esp., Eur. Schmett., 1, pl. 36, 1777.
" **Bulenta**, Bd.-Lec., pl. 67, 1883.
Thanaos Tages, Linn., Faun. Succ., 286, 1761.

Described as species by Scudder-Burgess, solely from the genitalia, Pr. Bost. Soc. N. Hist., 13, 296, 1870, and not recognizable.

Nisoniades Ennius.	**Nisoniades Tibullus.**
" **Horatius.**	" **Propertius.**
" **Virgilius.**	" **Plautus.**
" **Terentius.**	" **Funeralis.**
" **Ovidius.**	

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ADDENDA.

13. **Troilus,** local. Fort Macleod, N. W. Terr., by Geddes.
15. **Turnus,** form GLAUCUS, Fort Macleod, N. W. Terr., by Geddes.
19. **Pilumnus,** desc. l. and chr., Wm. Schaus, Papilio, 4, 100, 1884.
43. **Olympia,** loc. Summit, N. W. Terr., auct. Geddes.
53. **Genutia,** loc. southeast Texas, by S. F. Aaron.
59. **Fantasia,** loc. " " "
57. **Agarithe,** loc. So. Ill., auct. French.
60. **Lanice,** Lintn. desc. Papilio, 4, 138, 1884.
63. **C. Meadii,** loc. N. W. Terr., by Geddes.
105. **Leto,** loc. " " "
127. **A. Nevadensis,** Calgarry, N. W. Terr., by Geddes.
134. **Artonis,** loc. Koutainai, " " "
154. **Claudia,** loc. McLean, " " by Bean.
161. **Nubigena,** loc. Crow's Nest, " " by Geddes.
169. **Palla,** loc. Col. by David Bruce.
173. **Harrisii,** loc. Col. by David Bruce.
174. **Ulrica,** loc. southeast Texas, by S. F. Aaron.
181. **Thekla,** loc. " " "
186. **Nycteis,** loc. Edmonton, N. W. Terr. by Geddes.
187. **Carlota,** loc. Brandon, " " "
194. **Camillus,** loc. " " " "
200. **Punctata,** loc. southeast Texas, by S. F. Aaron.
226. **Coenia,** loc. McLean, N. W. Terr., by Bean.
242. **L. Lorquini,** loc. Crow's Nest, N. W. Terr., by Geddes.
250. **Cocles,** Lintn. desc. Papilio, 4, 141, 1884,
255. **N. Gemma,** loc. southeast Texas, by S. F. Aaron.
278. **Magdalena,** loc. Park Co., Col., 10,000 feet elevation, by Bruce.
290. **S. Silvestris,** loc. Garnett Ranche, N. W. Terr., by Geddes,
304. **Taygete,** loc. Park Co., Col., above timber, by Bruce.

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305. **Jutta,** loc. Lagan, N. W. Terr., by Geddes.

309. **Bachmani,** N. H.; Mass.; occasl. auct. Scudder.

349. **Nelsoni,** loc. Col., by Bruce.

359. **Clytie,** southeast Texas, S. F. Aaron.

424. **Shasta,** loc. Park Co., Col., 12,000 feet elevation, bare Mountain tops, by Bruce.

503½. **Pamphila Baracoa,** Luc., Sagra, Hist. Cuba, vii, p. 650 (1857).
Hab.—Antilles (Luc.), Sanford, Florida, by H. K. Morrison.

552½ **Pyrgus Locutia,** Hew. Exot. Butt. v. *Leucochitonea*, t. 2, figs. 19, 20 (1875).
Hab.—Panama (Hew.), S. E. Texas, by S. F. Aaron.

ERRATA.

5. **Zolicaon,** second line, erase "id. l. c. 2, pl. 14, 1884."

64. For var. HECLA, read var. HELA.

194. **Camillus,** read 1. dimorphic form CAMILLUS.
2. " " EMISSA.

268. For **Pamphiloides,** read † **Pamphiloides.**

275. " var. *Callias*, read var. CALLIAS.

309. " **Bachmanni,** read **Bachmani.**

325. " **Chrysalus,** read **Crysalus.**

425. " *Melissa*, read **Melissa.**

446. " **Maudan,** read **Mandan.**

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ERRATA.

Page 42, line 21, for *artemisiae*, read *sordidum*.
" 43, line 10, for an, read our.
line 12, for *Podapian*, read *Podapion*.
line 39, (5th from bottom) for humeri, read humeral.
" 44, line 9, dele sides at end of line.
line 27, after distinct insert a comma.
" 45, line 28, for *punctirostre*, read *punctinasum*.
" 51, line 22, for species recorded, read specimens received.
" 55, line 2, between and and not, insert usually.
line 22, after prominent, insert a semi-colon.
" 56, line 4, for pnbescent, read pubescent.
" 57, line 4 from bottom, after Smith, insert a semi-colon, and after *lanuginosum* dele the period.
" 58, line 1, for dense, read densely.
" 59, line 34, for *Astralagus*, read *Astragalus*.
line 35, dele *Astragalus*.
" 66, In list of species, change No. 6—NASUM to PUNCTINASUM.
No. 12, at end of line, change W. T. to U. T.
" 115, line 11 from bottom, for 3, read 6.
" 117, line 5 from bottom, for eyes, read legs.
" 120, line 6 from top, for score, read whorl.
" 121, line 6 from bottom, for Tunil, read Zunil; the same to be corrected wherever it occurs.
" 121, line 13 from bottom, for antennæ, read rather.
" 123, line 7 from bottom, for Abdomen, read Antennæ.
" 124, line 13 from top, for distinct, read distant.
line 19 from top, insert angles after posterior.
" 125, line 7 from top, for narrower, read narrow.
" 127, line 6 from bottom, insert elytra before rufo-castaneous.
" 128, line 4 from bottom, for depressed, read reflexed.
" 130, line 22 from top, for Nananja, read Naranja.
" 131, line 18 from top, for Dr., read De.
" 132, line 16 from top, omit dull.
line 23 from top, for shinining, read shining.
" 134, line 18 from bottom, for .12, read 1.2.
" 143, line 15 from bottom, for late, read laete.
" 154, line 16 from bottom, for *Anatrichis*, read *Acratrichis*.
" 157, line 16 from bottom, for basal, read base.
" line 19 from bottom, for 5, read 4.
" 164, As a synonym of lucicola add *quadrimaculata* Drap. Ann. gen. des Sc. Phys. Bruxelles, 1820, vii, p. 276, pl. 109, fig. 2.
" 191, line 20 from bottom, for hade, read have.
" 217, line 20 from bottom, for in, read is.
" 223, line 14 from bottom, for minature, read miniature.

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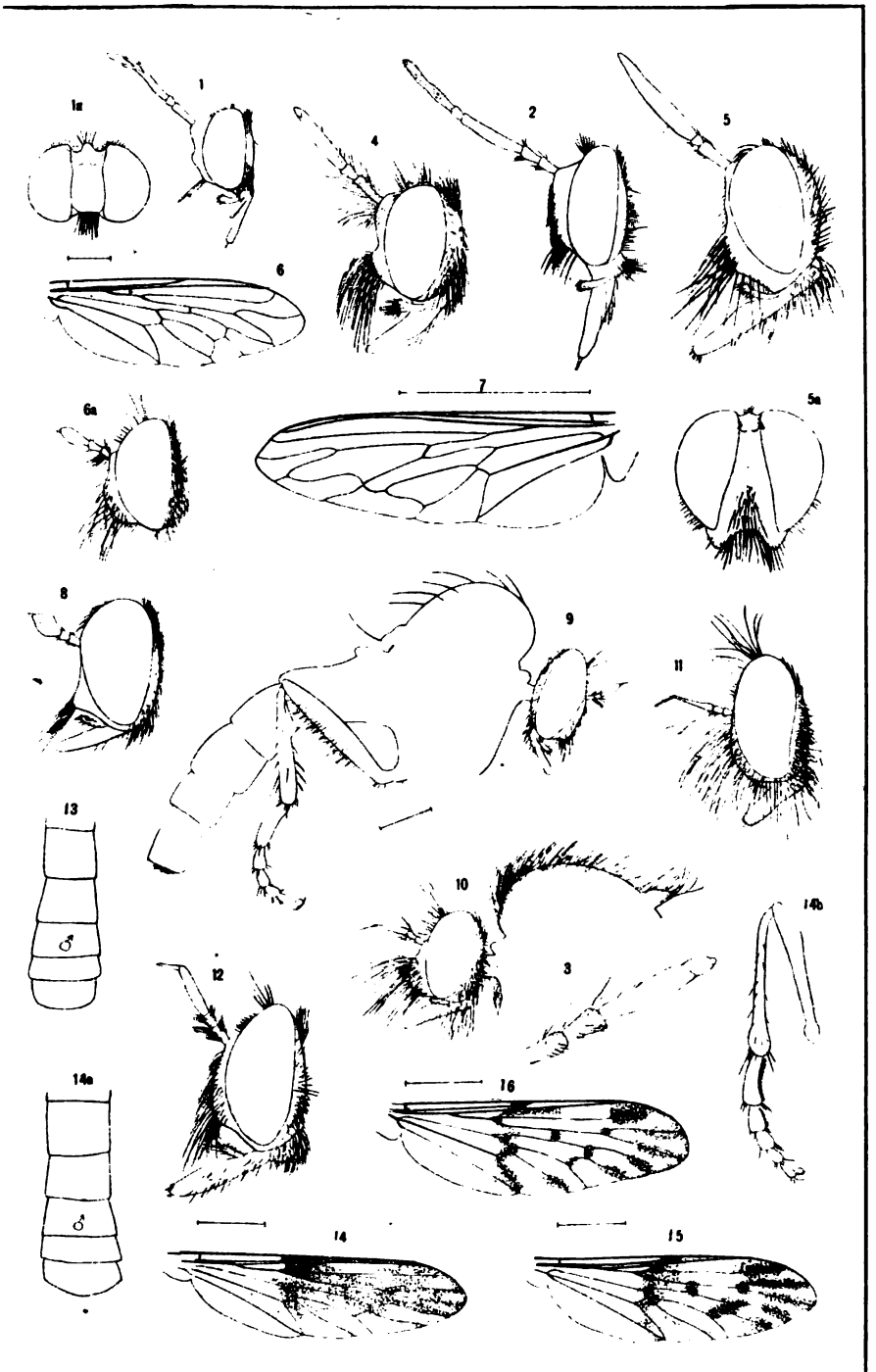

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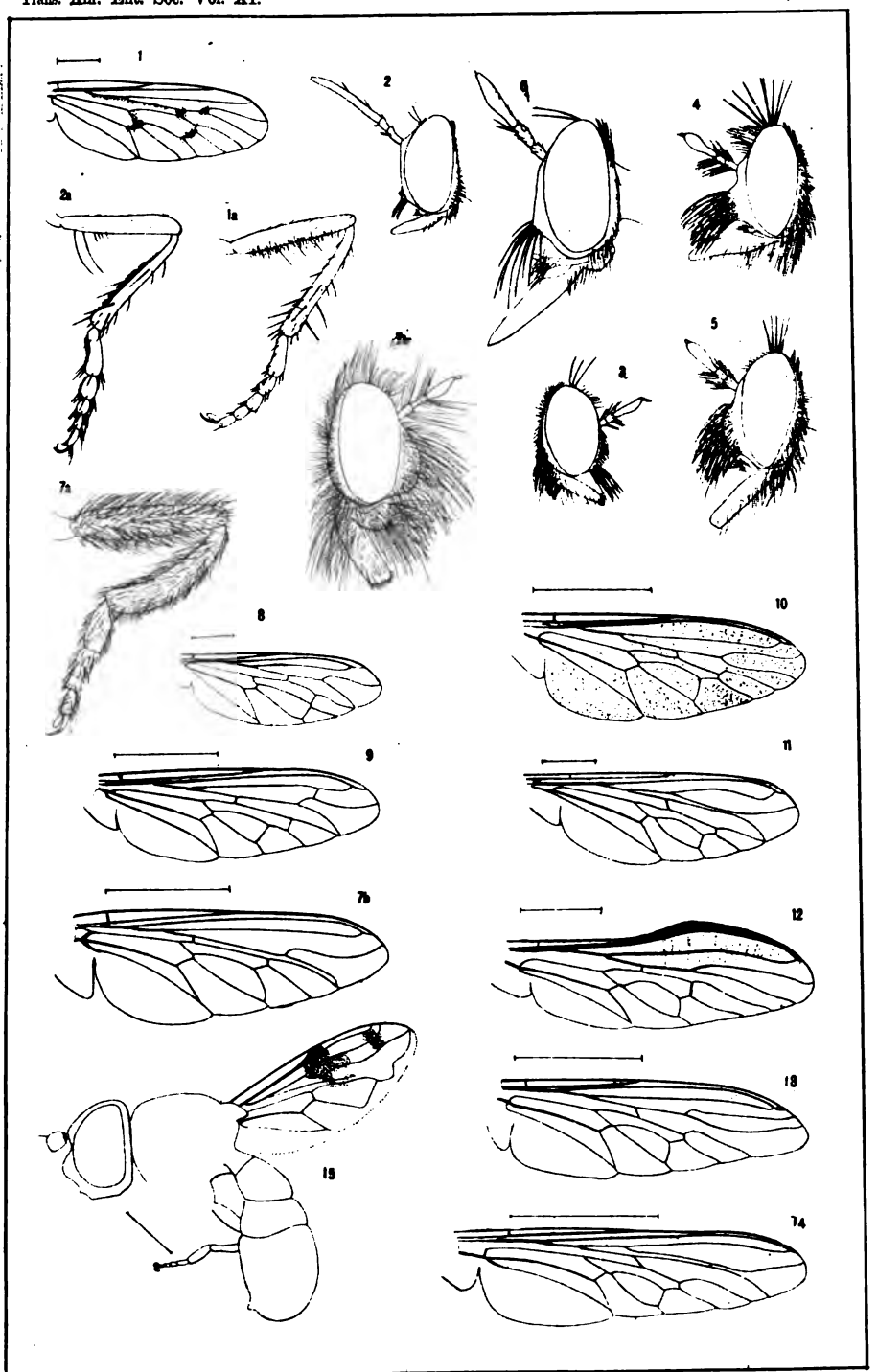

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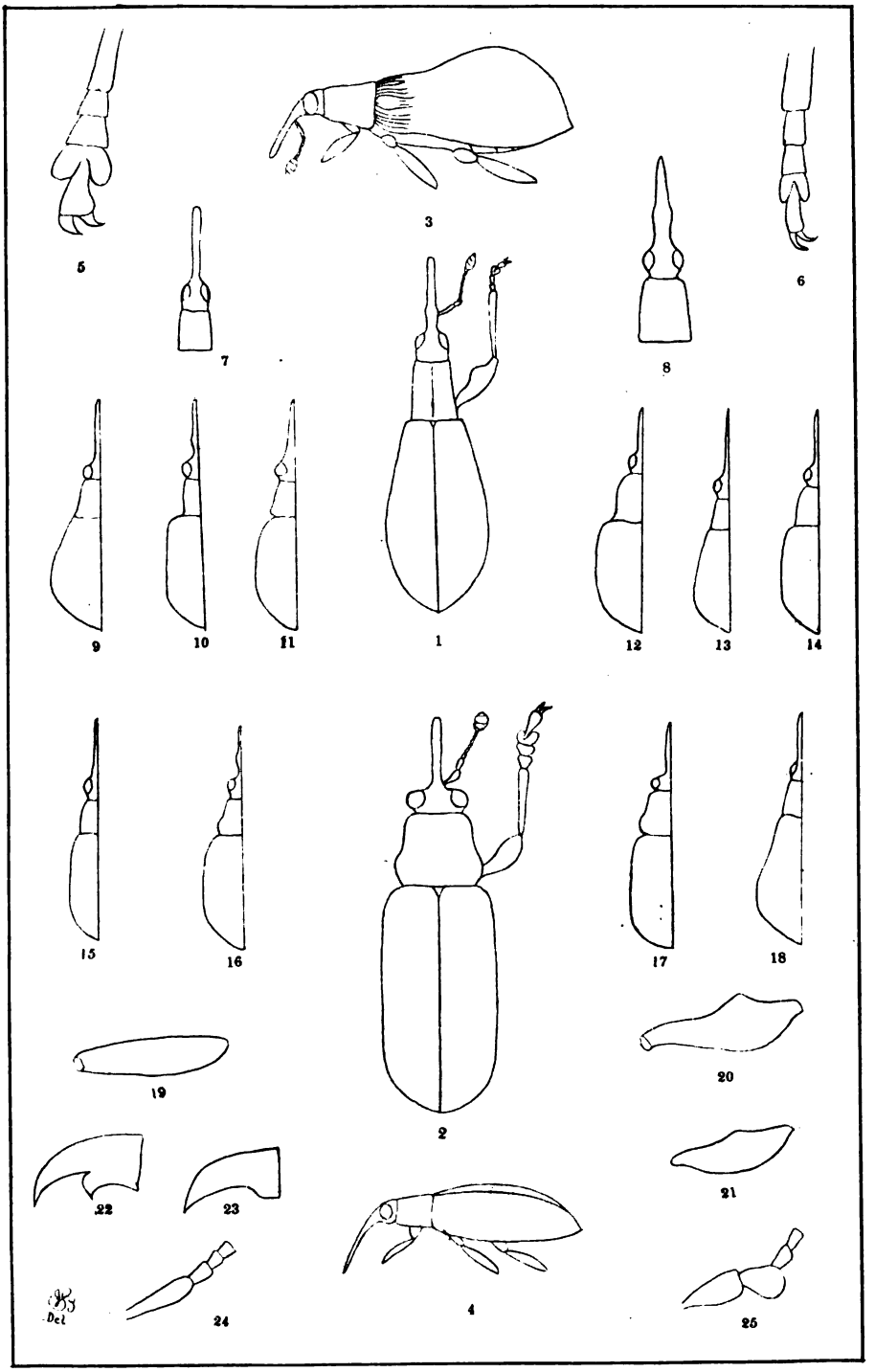

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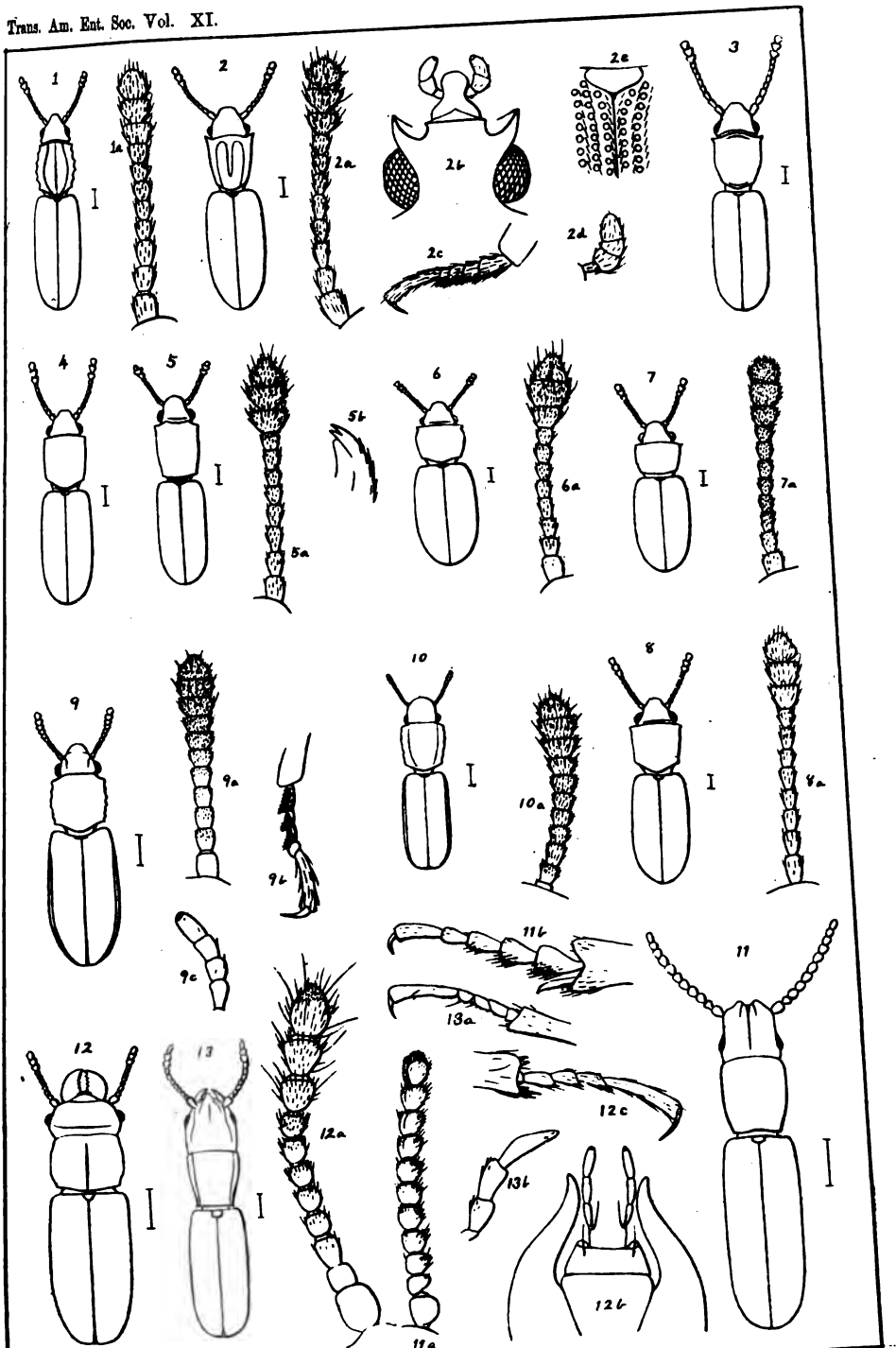

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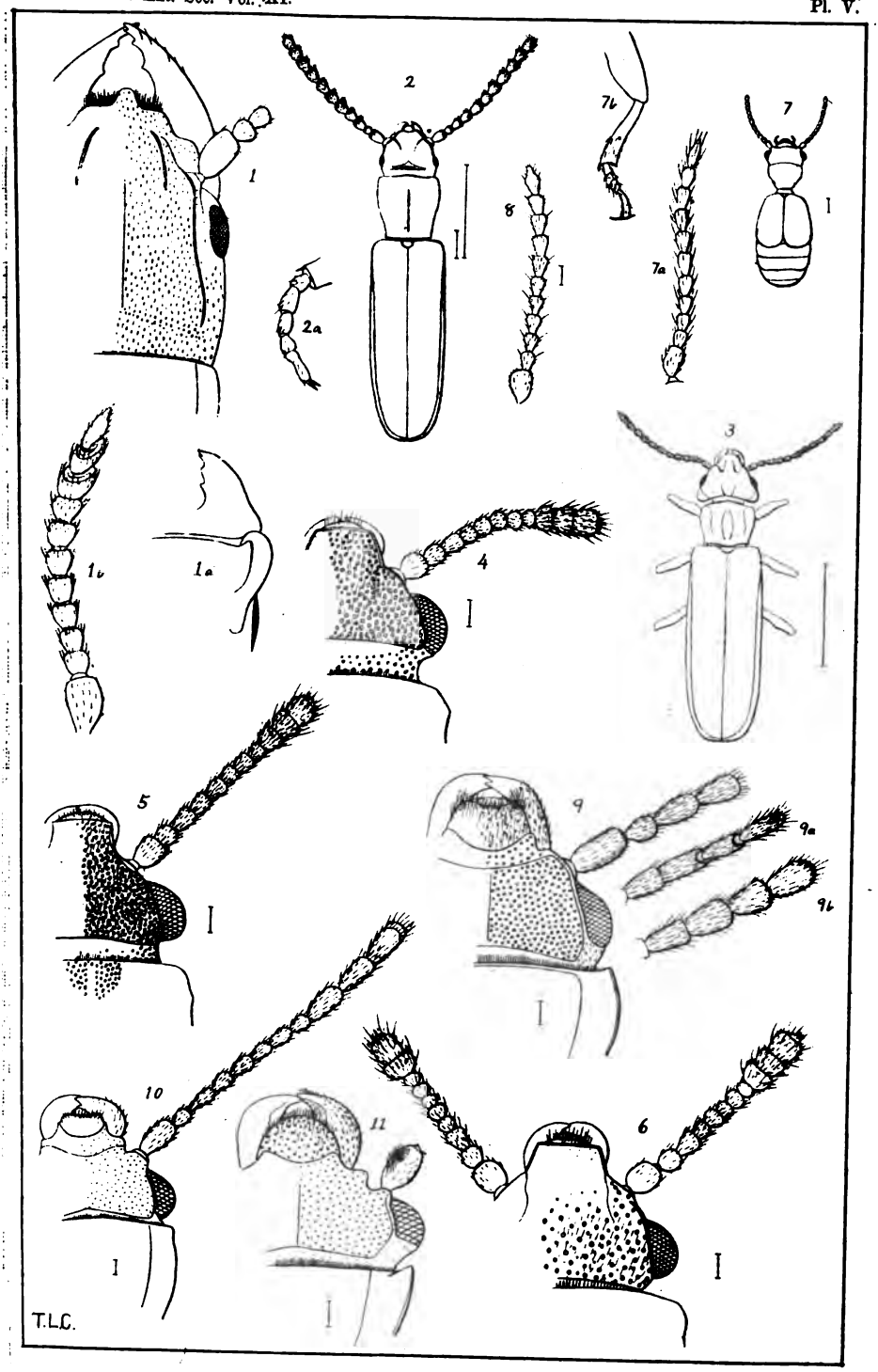

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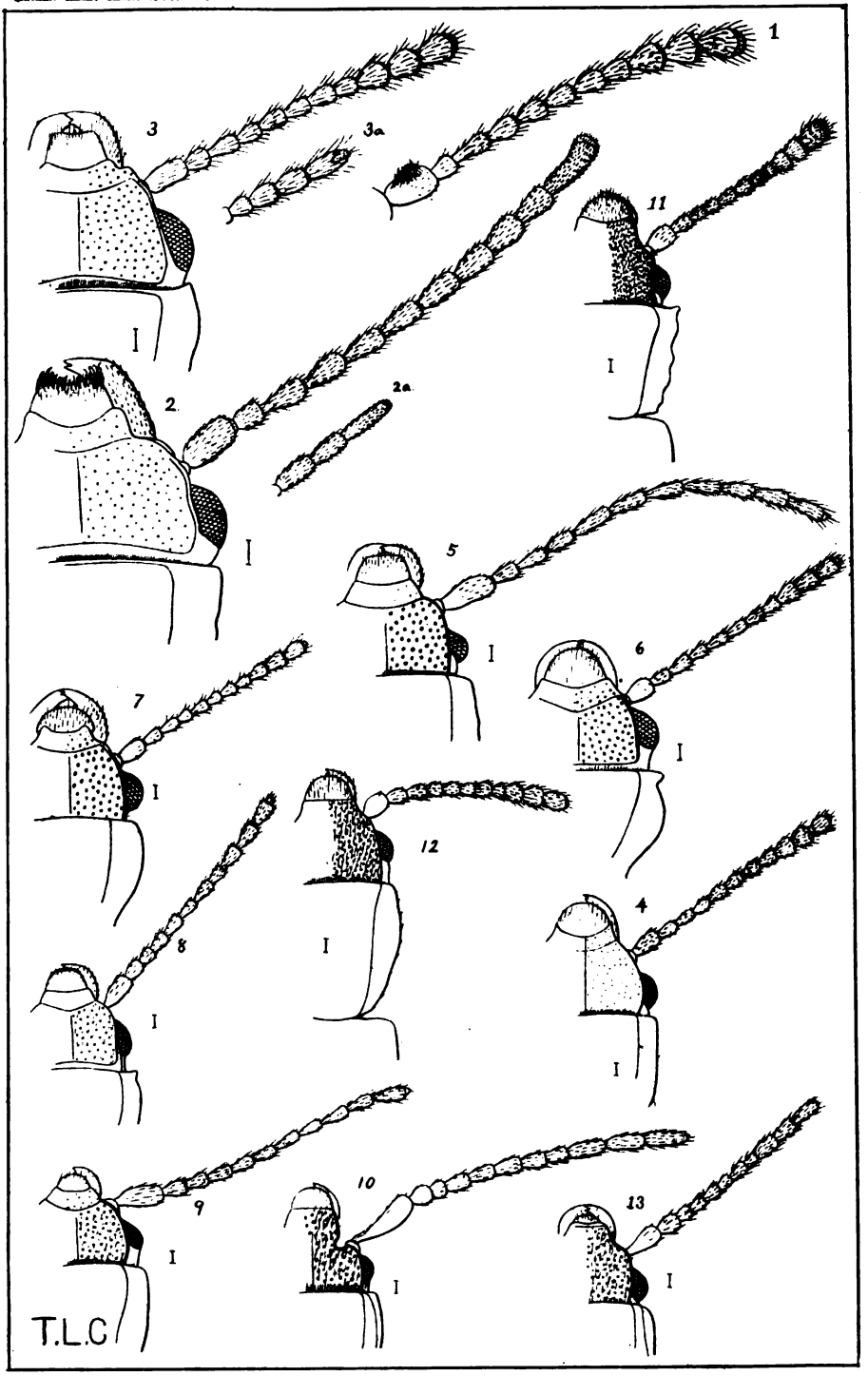

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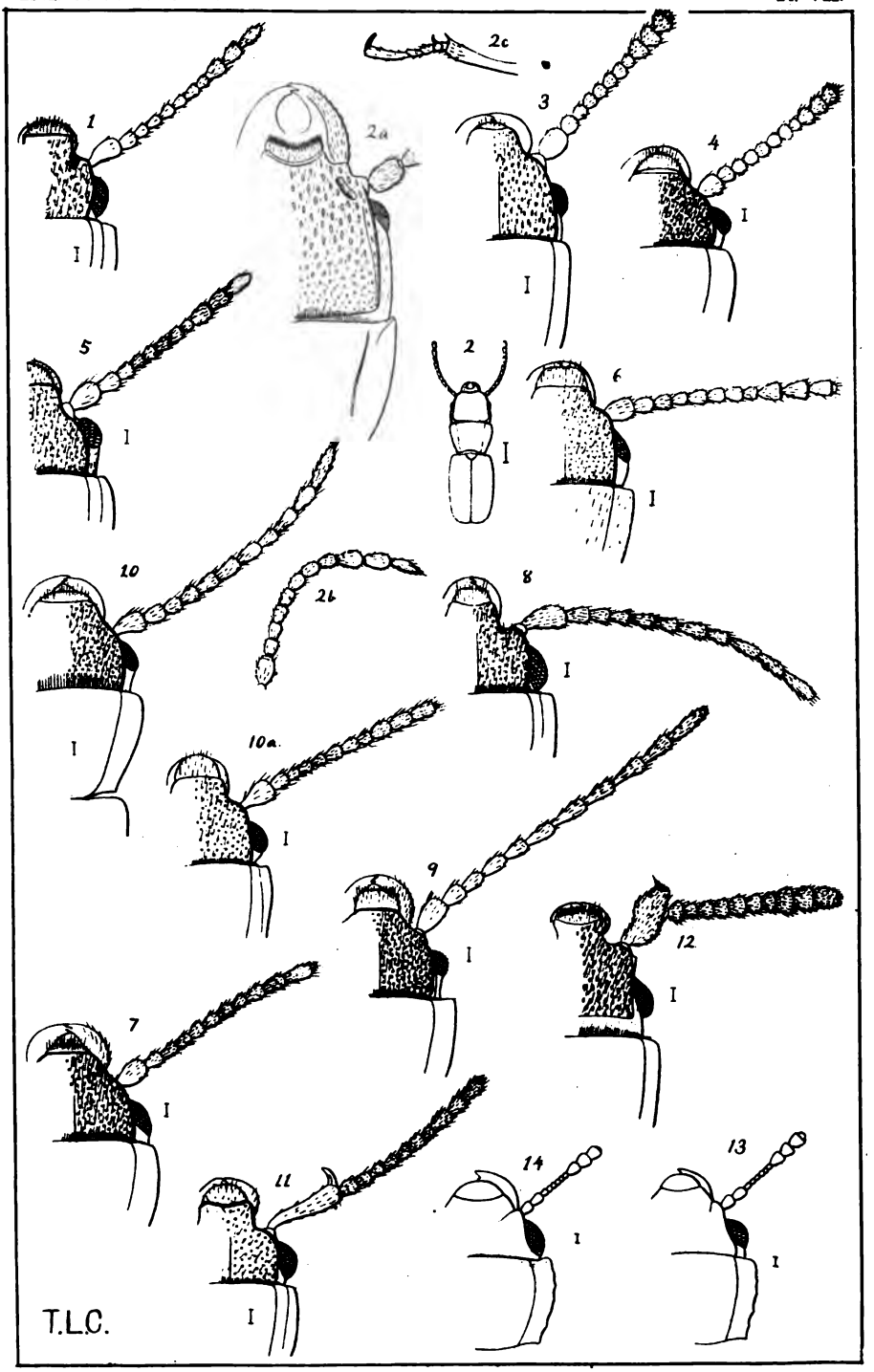

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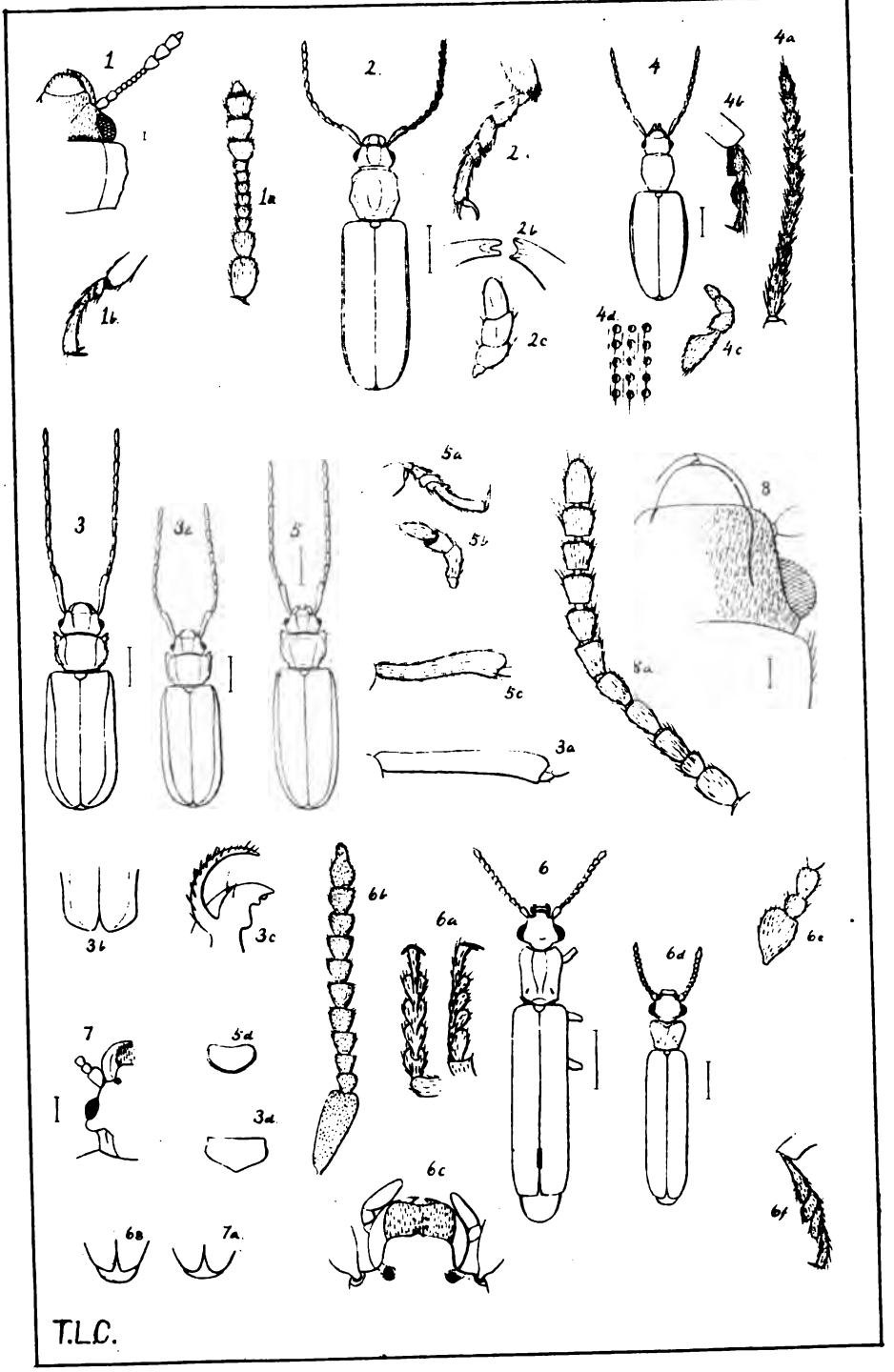

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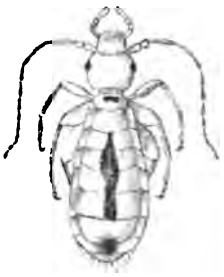

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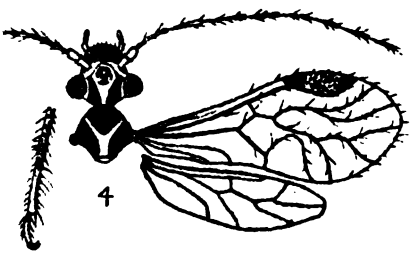

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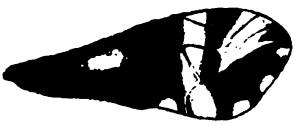

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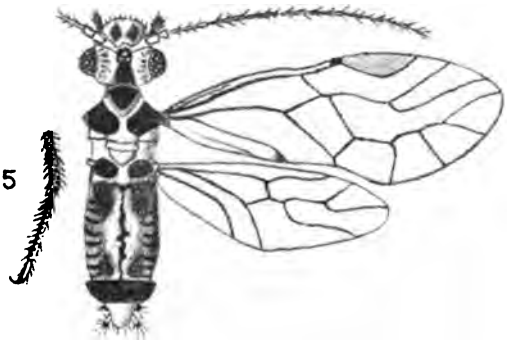

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